THIS WEEK'S National Petroleum NEWS

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American Gas Association, Natural Gas Dept. Kansas City, Mo., week of May 6.

Wisconsin Petroleum Association, Beaumont Hotel, Green Bay, May 15.

Virginia Independent Oil Men's Association, Richmond Hotel, Richmond, Va., May 15, 16.

National Oil Scouts Association of America, Fort Worth, Tex., May 20, 21.

Natural Gasoline Association of America, Mayo Hotel, Tulsa, May 21, 22, 23.

West Virginia Oil Marketers Association, Daniel Boone Hotel, Charleston, W. Va., June 13, 14.

North American Gasoline Tax Conference, Book-Cadillac Hotel, Detroit, Mich., Aug. 7, 8, and 9

Independent Oil Men of America, Stevens Hotel, Chicago, Oct. 21, 22, 23.

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General

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AIRPLANE view of the Elwood Terrace oil field owned by the Rio Grande Oil Co. and the Barnsdall Oil Co. of California. The field is on the shore of the Pacific above Santa Barbara in Santa Barbara county.

The two companies control 880 acres in the block. The two tests shown in the upper part of the picture are owned by other interests and are supposed to be off structure.

The discovery well in this field was drilled in on July 26, 1928, and still is reported able to produce as much oil as when completed.

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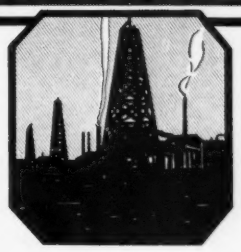

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Vol. 21 CLEVELAND, MAY 8 No. 19

Gas Waste Bill to Slow Production As Cop Controls Traffic

By Paul Wagner
N. P. N. STAFF WRITER

LOS ANGELES, May 2

CALIFORNIA'S pending legislation to establish control over gas wastage, in the interest of oil conservation, is described as functioning like a traffic policeman.

The bill, passage of which is considered certain, will slow down the operator who has been unreasonably wasting his gas, by restraining his exploitation to such a reasonable flow as may be found necessary to efficiently produce his oil.

The oil/gas ratios to be established in the individual fields will be such as to promote efficiency, discourage waste and automatically scale down overproduction of flush crude.

The bill has already passed the California senate and has been reported on favorably by a house committee. It is expected to become a law in August, 90 days after passage by the legislature within the next two weeks.

The bill, drawn by operators to meet the wishes of Governor Young, is so drafted that operators or others may enter voluntarily, with approval of the state oil and gas supervisor, "**into agreements for the purpose of bringing about the cooperative development of all or a part, or parts, of such field (where it is in the interest of protection of oil or gas from unreasonable waste) as a unit, or for the purpose of fixing the time, location and manner of drilling and operating wells for the production of oil or gas, or providing for the return of natural gas into the subsurface for the purpose of storage or repressuring of an oil or gas field.**"

Under the bill's provisions any such agreement shall bind the successors and assigns of the parties thereto in the land affected thereby and shall be enforceable by court action.

A section of the bill declares the unreasonable waste of natural gas by the act, omission, sufferance or insistence of the lessor, lessee or operator of any land containing oil or gas, or both, whether before or after the removal of gasoline from such natural gas, "is hereby declared to be opposed to the public interest and is hereby prohibited and declared to be unlawful."

The bill provides for hearing upon complaint to the director of natural resources by any person operating in any oil field where there is occurring or threatened an unreasonable waste of gas, or a hearing may be ordered on application of the state oil and gas supervisor.

Provision is made that the supervisor shall determine, at the conclusion of the hearing, whether or not there is an unreasonable waste of gas in the field in question and its extent. In case of gas wastage being found unreasonable an order shall issue from the supervisor directing its discontinuance.

Machinery for appeal by the operator from the order of the supervisor is contained in a clause in the bill which provides that the operator must file, within five days, a written statement that the order is not acceptable and that appeal is being taken to the board of commissioners of the district.

ANY appeal shall operate as a stay of any order issued. Immediately upon filing of appeal notice, the deputy supervisor of the district, as secretary ex-officio of the board of oil and gas commissioners, shall call a hearing of the commissioners to pass on the merits of the appeal.

The bill provides that no commissioner shall be disqualified from sitting or acting in any appeal by reason of the fact that he is an employe of a lessor, lessee, or operator who is interested in the oil or gas field

400,000,000 Cubic Feet Popping Off Daily

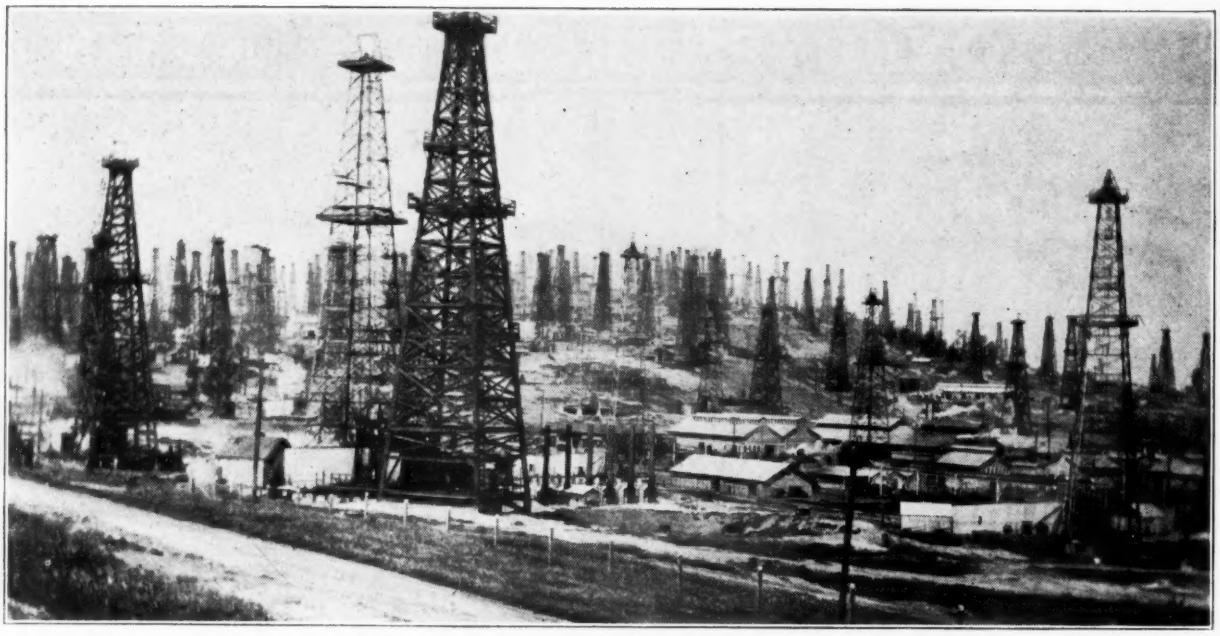
LOS ANGELES, May 2.—It is estimated the total quantity of natural gas blowing into the air in the state at present approximates 400,000,000 cubic feet daily.

This is divided as follows. Santa Fe Springs town lot field, 250,000,000 cubic feet; Signal Hill division of the Long Beach field, 75,000,000 cubic feet; Ventura Avenue field, 50,000,000 cubic feet; Kettleman Hills, 25,000,000 cubic feet.

In 1928, according to an economic survey of Claude C. Brown, state gas administrator, more than 210,000,000 cubic feet daily was blown into the air.

His report indicates a total of 317 billion cubic feet produced in 1928.

A total of 8,250,000,000 cubic feet of gas was put back into depleted horizons in the oil fields in 1928, Mr. Brown's report shows.



Signal Hill area of Long Beach field in California, showing intensive town-lot drilling it is hoped can be slowed down by the gas conservation bill now before the California legislature

affected by such order appealed from.

It is further provided that the appeal hearing shall be *de novo* and at such place in the district as the commissioners may designate. Within 10 days from the taking of such appeal five days' notice in writing shall be given to the appellant of the time and place of such hearing, and for good cause the commissioners may postpone such hearing for not exceeding five days.

The board of commissioners after hearing shall affirm, set aside or modify the order as determined by a majority. The decision of the board shall be forthwith filed with the oil and gas supervisor and upon such filing shall be final.

Provision is made for enjoining gas wastage, after decision by the supervisor or board of commissioner as follows:

"When the decision of the state oil and gas supervisor that there is an unreasonable waste of gas occurring or threatened shall have become final, a certified copy thereof, or, if modified by the board of commissioners, then a certified copy of the order as modified, shall be filed with the director of natural resources and the director of natural resources shall, unless said order is complied with voluntarily, have proceedings instituted in the name of the people of California to enjoin such unreasonable waste of gas.

"Such proceedings shall be instituted in the superior court of the county in which the property where the wastage is occurring or is threatened or any part thereof may lie. There may be joined in the proceedings any number of defendants, although their properties and interests may be severally owned and their actual or threatened unreasonable wastage of gas may be separate and distinct provided, the actual or threatened unreasonable waste by all the defendants are in or with reference to the same producing or prospective oil or gas field, and it shall be no defense to such proceedings that one or more of the defendants therein may not have had notice of or been party to the proceedings contemplated . . . . . by this act.

"In such suits no restraining order shall be issued *ex parte* but otherwise the procedure shall be conformable with the code of civil procedure of California. No temporary or permanent injunction issued in such proceedings shall be refused or dissolved or stayed pending appeal upon the giving of any bond or undertaking or otherwise.

"In such proceedings the findings of the oil and gas supervisor, unless set aside or modified by the board of commissioners, or if so modified then except to the extent so modified, shall constitute *prima facie* evidence of the unreasonable wastage of gas therein found to be occurring or threatened."

Extensions Authorized In Kettleman Hills

(By Telegraph)

WASHINGTON, May 6.—To enable Secretary of the Interior Wilbur to hold back drilling on public lands in Kettleman Hills, Calif., Attorney General Mitchell today ruled that Wilbur had authority, under the extension of permits additions to the national leasing law, to grant extensions upon condition that the permittees would agree not to drill for a period which would still leave them time to complete their work within the expiration day of the extended permit.

This ruling was called forth by the fact that Dr. George Otis Smith, of the U. S. Geological Survey, found, when he tried to prevent indiscriminate drilling in Kettleman Hills, that permittees were hurrying their drilling on account of the near expiration of the two-year time limit fixed by the act of 1920.

Under the new ruling Wilbur will ask permittees to hold up their drilling under promise of extensions such as were provided for in the acts of 1922 and 1928, pending the making of plans for orderly development of Kettleman Hills. The new ruling was necessary in large part on account of the spurt in drilling caused by President Hoover's policy announced March 12 on withdrawing permits on public lands.

To Curb Ohio Tax Dodgers

CLEVELAND, May 3.—Ohio oil companies are planning active cooperation with state gasoline tax officials to see that the state is not cheated out of tax money.

A conference toward this end has already been held in Cleveland by W. A. McAfee, general counsel of the Standard Oil Co. of Ohio; Hubert B. Fuller, general counsel for the Ohio Petroleum Marketers Association; Ben A. Levin assistant city prosecutor of Cleveland, and Arthur Krause and Oscar Brown of the Ohio attorney general's office.

Some cut price dealers have been failing to pay the state tax and using the 3 cents extra margin they have had to demoralize the retail market, oil men say. With the tax now 4 cents in Ohio the oil men are anxious to prevent other dealers disposed toward price cutting to get an extra 1 cent advantage.

Commercial Discounts Lead to Price War On Gasoline in Oklahoma

TULSA, May 4

THE so-called commercial discounts in the gasoline retailing trade are the cause of a gasoline price war in Oklahoma.

Four distinct tank wagon and service station price schedules were in effect today.

Advertising space in Oklahoma newspapers was being used by Pierce Petroleum Corp. to explain its position in the recent price changes to the public. In this it said it would make the filling station price on its gasoline to everyone the same as any secret or preferential price given by any other company.

The Pierce company led April 1 in abolishing secret commercial discounts and making the spread between tank wagon and service station price three cents instead of four, as previously maintained in the price schedule in the state.

"The proposed code of marketing practices for the oil industry does away with secret discounts and concessions to favored classes of customers," said one executive with the Pierce Petroleum Corp. "Our position in Oklahoma is that, if such discounts are to be given, let's give them to everybody and be fair about it. If they are not good practice for all classes of customers let's cut them out entirely."

The Magnolia Petroleum Co., recognized normally as the price maker in the state, today has a 14-cent tank wagon price and an 18-cent service station schedule.

Pierce Petroleum Corp. has a tank wagon price of 14 cents, and a service station price of 17 cents.

Marland Refining Co. has a 15-cent tank wagon and a 19-cent service station price.

Some of the other major companies have tank wagon prices of 15 cents and service station prices of 18 cents.

This apparently is the result of the Magnolia announcing May 1 that, by advancing service station price one cent, the 4-cent spread would again be placed in effect, instead of the 3-cent spread which had been in force since April 1. Since Pierce Petroleum Corp. April 1 took the lead in abolishing commercial discounts and instituting a 3-cent spread, with tank wagon price 15 cents and service station price 18 cents, all major operators in the state have had the 15 and 18-cent schedules, and have not accepted commercial discounts, as far as could be checked.

Magnolia's change to a 4-cent spread led to their statement that there were three or four points where commercial discounts had been reestablished since April 1. This change made the tank wagon price 15 cents and service station price 19 cents.

Pierce Petroleum Corp. followed Magnolia's move by reducing tank wagon price 1 cent to 14 cents and service station price 2 cents to 17 cents. Magnolia then reduced tank wagon and service station prices 1 cent to 14 and 18 cents. Marland met Magnolia's first move to 15 and 19 cents, and up to close of business May 4 had not made any more changes. Some of the other major companies stood pat on the 15 and 18-cent schedule.

Prior to April 1 Oklahoma was the only state in the Mid-Continent with the exception of Texas which had commercial discounts. Considerable work was done by representatives of major distributors to eliminate this condition, and on April 1 Pierce Petroleum Corp. announced it would abolish all commercial discounts and would institute a 3-cent spread, with tank wagon at 15 cents and service station price at 18 cents. Before the close of the day April 1 other major distributors with the exception of Magnolia had met this new schedule, and Magnolia a day or two later took the same action.

The situation apparently held until Magnolia on May 1 made its change. Pierce Petroleum Corp. officials, in announcing their change, said they had no desire to precipitate a price war but that, since they had been the leaders in abolishing the commercial discounts and establishing a 3-cent spread in the state, they desired to bring the whole matter to a head and determine definitely if the effort to abolish the commercial discount is a failure.

No Secret Rebates on Gasoline

Announcement by Pierce Petroleum Corporation

1—The giving of discounts to a favored few, which few usually is composed of persons and corporations best able to pay the full retail price for gasoline and thus making only the ordinary man pay the full retail price for gasoline is obnoxious to this corporation and contrary to its business policy.

2—The Pierce Petroleum Corporation believes that gasoline is a commodity essential to our present-day life for transportation and the general function of business life and should be available to all at the same price.

3—It firmly believes that discriminating, preferential and secret discounts and prices given to a favored few are contrary to public policy and good, sound business principles, and it proposes to do whatever is necessary to maintain this policy.

4—Effective the morning of May 2, 1929, the price of Pierce Pennant gasoline at filling stations to everybody was reduced to 17c per gallon which was the price that was being given by some "marketers" through secret and preferential discounts to a favored few.

5—The Pierce Petroleum Corporation proposes to hold to the policy herein announced in the State of Oklahoma and make the filling station price on Pierce Pennant gasoline to everyone the same as any secret or preferential price given by any other "marketers" to anyone under any preferential, discriminating or secret discount arrangement, no matter under what guise it may be found.

6—In our effort to maintain this policy we respectfully ask the co-operation of everyone.

Pierce Petroleum Corporation

From Tulsa World, May 4, 1929

Surplus California Natural Gasoline Competing in Eastern Markets

By George L. Ratcliffe*

(Written especially for National Petroleum News)

DURING the past year California natural gasoline in large quantities has invaded markets formerly supplied by Eastern and Mid-Continent manufacturers of that commodity. As a result those manufacturers have been becoming more and more vitally interested in the natural gasoline situation in California and its probable future effect upon the market for their product.

There seems to be no doubt that California natural gasoline will henceforth be a vital economic factor in Eastern natural gasoline markets. This has been brought about by a combination of circumstances, which may be partially summarized as follows:

1. The installation of rectifying columns at natural gasoline plants and refineries in California, making possible the production of any desired grade of natural gasoline for shipment.

2. A better understanding on the part of refiners and others throughout the country of the properties of natural gasoline, which has resulted in dispelling erroneous ideas formerly held of the danger of shipping and handling natural gasoline.

3. Mergers of major California oil companies with Eastern or Mid-Continent oil companies, which have enabled some of the California companies to dispose of surplus natural gasoline by shipment to their affiliated companies in the East.

4. An increase in the number of tankers available, which has facilitated transportation.

5. Over-production of natural gasoline in California, in the absence of which there would, of course, be no surplus natural gasoline available for shipment.

It has been rather difficult for the average manufacturer of natural gasoline east of the Pacific Coast to visualize the natural gasoline situation in California because of essential differences in conditions with which the industry is confronted in the two sections of the country. To understand economic conditions in California it is necessary to have a general knowledge of these conditions.

CALIFORNIA now is producing more than 2,000,000 gallons of natural gasoline a day. This is about 40 per cent of the total U. S. production.

All this gasoline cannot be utilized on the West Coast and part is coming east by tanker where it will compete for a market with natural gasoline produced in the Mid-Continent and other smaller fields in this country.

NATIONAL PETROLEUM NEWS asked Mr. Ratcliffe, president of the California Natural Gasoline Association, to prepare the accompanying article. It discusses in detail the present California natural gasoline situation and prospects for the remainder of the year.

Mr. Ratcliffe estimates that California production could be increased 25 per cent by the end of the year if crude production curtailment is not made quite effective. Even if new fields are held back so that present gasoline production is unchanged, California will continue to have a substantial surplus of natural gasoline which must find a market elsewhere.

In the first place, California is producing at the present time (April 1st, 1929) approximately 2,200,000 gallons of natural gasoline daily, which represents approximately 40 per cent of the total natural gasoline production of the United States. This production is manufactured in 142 natural gasoline plants, which is an average of approximately 15,000 gallons of gasoline per plant per day.

Out of the 142 plants mentioned above, perhaps 100 will average 20,000 gallons per plant per day. A number of California plants produce greatly in excess of this amount. For example, at the present time the Shell Oil Company has a plant at Signal Hill which is producing approximately 187,000 gallons of natural gasoline daily.

The General Petroleum Corporation of California has a plant at Santa Fe Springs which is producing approximately 145,000 gallons daily, and the Norwalk Company has a plant at Santa Fe Springs which is producing approximately 135,000 gallons daily. These figures are mentioned merely to bring out the fact that the average natural gasoline plant in California is larger than the average natural gasoline plant east of the Pacific Coast, and, consequently, the operating cost per gallon will usually be lower.

Royalties on natural gasoline produced at plants are all based upon a certain percentage of the proceeds of the sale of natural gasoline extracted from the gas, these percentages varying from 33 1/3 per cent to as high as 50 per cent. All of the wet gas derived from different sources and treated in any certain gasoline plant is tested at least once a month to determine its gasoline content. This gasoline content is determined in a majority of cases by the 30-lb.-32°F. Pressure Charcoal Test. Some of the companies use the Atmospheric Charcoal Test.

Practically all gas treated in gasoline plants is metered from each lease, or group of leases. The potential gasoline content of the gas is determined by multiplying the quantity of gas taken from the lease by the number of gallons determined by test, and the production of gasoline from that particular gas is determined as a pro rata share of the total gasoline actually produced and sold by the plant, the total actual production of the plant being divided by the total potential production available in the wet gas to determine the factor by which the potential production from each source is multiplied.

ROYALTIES paid on dry gas sales by the gasoline manufacturer will run anywhere from 50 to 100 per cent of the proceeds of the sale of the dry gas. At the present time royalties being offered on new contracts will average 40 per cent on natural gasoline and 50 per cent on dry gas sales.

At the present time 70 per cent of the total natural gasoline production of California referred to above is produced in plants owned and operated by six major California oil companies who are all producers, refiners and distributors of petroleum products. These companies are as follows:

Standard Oil Company of California
Shell Oil Company
Texas Company
General Petroleum Corp. of Cali-

*President, California Natural Gasoline Association.

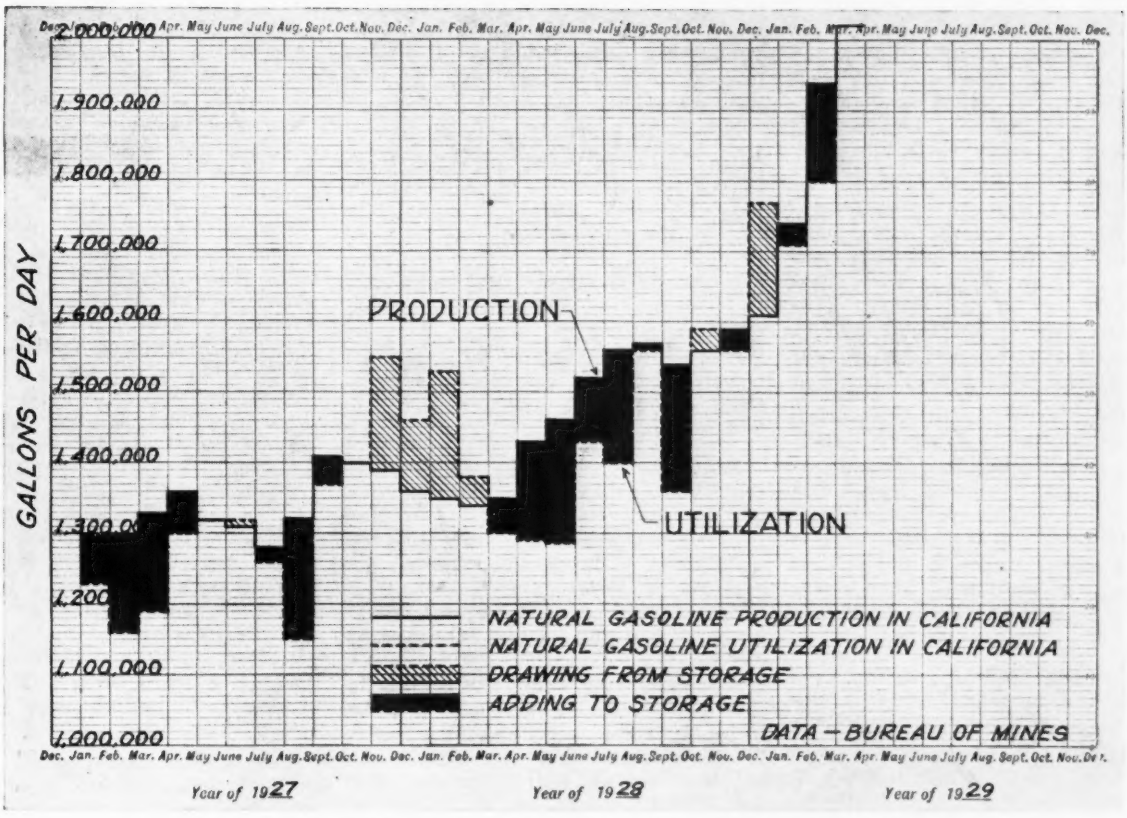


Fig. 1—Production and utilization of natural gasoline in California

fornia (Standard Oil Co. of New York)

Union Oil Company of California

Richfield Oil Company

The remaining 30 per cent is produced by other oil companies and by independent natural gasoline companies.

THE six major oil companies referred to above not only utilize the 70 per cent of the total which they produce in their own plants, but together with the Associated Oil Company (Tide Water Oil Company)—another major California company which has no natural gasoline plants—they purchase on contract enough of the natural gasoline produced to give them 92 per cent of the total for their use.

The remaining 8 per cent of the total production is available for use by approximately 20 other oil companies who refine and distribute motor fuel. Most of this 8 per cent is either produced or purchased on contract by these refiners and there is seldom as much as 1 per cent of the total production available for spot sales at any given time. Much of the time there is considerably less than this amount available for spot sales.

The major oil companies even if they should have excess natural gasoline in storage, seldom, if ever, sell any on the spot market. They must anticipate their natural gasoline requirements some time ahead and cannot figure them on a day to day basis. Unexpected export buying of motor fuel may result in turning an apparent excess of natural gasoline held by any given company into a shortage.

The spot prices quoted in trade journals for California natural gasoline are, therefore, apt to be misleading in that they apply to an almost insignificant percentage of the total most of the time and represent, perhaps, the price at which one truck load of gasoline has moved to some small refiner who is short at that particular time.

In general the quoted spot price is higher by possibly two or three cents than the natural gasoline manufacturer can obtain on a contract for large quantities over a period of time. On the other hand, the termination of a contract may at times temporarily throw larger quantities on the spot market, which results in the spot price at that time being lower, perhaps, than could be obtained on contract at the same time.

Contracts covering the purchase of natural gasoline in California have in the past usually been based upon the Standard Oil Company's service station price, the price clause being worded somewhat as follows:

"The price to be paid shall be three cents under the service station market price, exclusive of tax, quoted for Red Crown gasoline at service stations operated in Los Angeles by the Standard Oil Company of California."

The differential under the service station price has varied from 1c under to 11½c under. In the past three months contracts have been made on differentials of 9½c to 10½c under the service station market. The state gasoline tax, which is 3c a gallon, is, of course, deducted from the service station price before the differential is deducted to determine the price to be paid.

Contracts have heretofore been made for periods of one, two, three and five years. This has resulted in a very confusing price situation. During the past year some natural gasoline manufacturers have received as much as 14½c per gallon for their product, while at the same time others were receiving only 6c for the same grade of material, the higher prices being paid under the terms of contracts which were entered into approximately three years ago. This exaggerated condition is hardly expected to prevail in the future inasmuch as most of the purchasing companies are now confining their contracts to a term of one year, which will be better for all concerned in the long run.

THE California oil fields, in spite of their immense production, are located in a relatively small area. They are divided roughly into three groups, first in importance being the Los Angeles Basin, which is responsible for most of the production. All of the

fields in this Basin are located close to Los Angeles, in an area whose north and south dimension does not exceed twenty-five miles, and whose east and west dimension does not exceed, perhaps, twenty miles.

The second group of fields is located in the San Joaquin Valley, approximately one hundred twenty-five miles north of Los Angeles, and covers an even smaller area. The third group is located in and around Ventura, approximately seventy-five miles northwest of Los Angeles, and is confined to a very small area.

Several of the major companies, such as the Standard, Union, Shell and associated, also have large refineries on San Francisco Bay. The fact that all of the companies have large refineries in the Los Angeles Basin, however, makes it possible to deliver a large amount of the natural gasoline produced or purchased to the refinery in gasoline pipe lines.

Some of the natural gasoline produced in the northern fields is delivered to San Francisco with the crude in crude oil lines. Due to the large number of good paved roads in California it is possible for much of the natural gasoline manufactured to be delivered to the refinery by tank truck.

THESE trucks, with their trailers, usually haul about 6,000 gallons of natural gasoline to a load. At the present time 81 per cent of the total natural gasoline production of California is shipped to refineries via gasoline pipe lines; 8 per cent of the total is shipped in Class 4 insulated tank cars; 7 per cent is shipped in trucks, and 4 per cent is shipped with the crude in crude oil lines. None of the natural gasoline manufactured is shipped in uninsulated Class 3 tank cars except, perhaps, an occasional emergency shipment.

Production of natural gasoline for the past two years is shown in Figure 1. This figure also shows the utilization of natural gasoline in California, the area between the two curves representing natural gasoline put into storage.

All of the figures on production, utilization, and so forth, referred to in this article, are taken from the Bureau of Mines data. Production is actually higher than shown by the Bureau of Mines figures due to the fact that all of the companies do not report. The production of natural gasoline at the present time is, perhaps, 100,000 gallons per day higher than shown by this data.

A few weeks ago it looked as though California natural gasoline production would show a tremendous increase during the balance of the year 1929. This was due to the fact that several large fields were in the process of development and it was expected that large gas production from these fields would result in the production of large quantities of natural gasoline.

The principal fields from which these increases were expected were Signal Hill, Santa Fe Springs, Lawndale and Kettleman Hills. Signal Hill (Long Beach) reached its peak of natural gasoline production in January at 21,000,000 gallons per month and is now on the decline, having produced 19,000,000 gallons for the month of February. This decline, however, due to additional completions and unusual thickness of sands, will not be rapid.

Santa Fe Springs, due to the fact that a comparatively small portion of the field was productive in the Buckbee and Nordstrom zones, has not quite come up to expectations and the gasoline production from those zones, which reached a peak of approximately 13,000,000 gallons for February, is declining quite rapidly. Two deeper zones have been definitely proven in that field, however. The first of these is the O'Connell zone at approximately 6,500 feet. The second is the Clarke zone at approximately 7,200 feet.

Both of these sands promise to be at least as productive per well as the Nordstrom and Buckbee sands and promise to cover a considerably greater area. New wells from these zones will be coming in from time to time, with a large number of wells due in about July. These wells from the deeper sands will, no doubt, maintain Santa Fe Springs natural gasoline production at a high level throughout the major portion of the balance of the year.

The fact that a greater area will be productive in these sands will probably result in the construction of additions to two or three of the major companies' gasoline plants. Lawndale has been definitely proven a flop and no additional production of any importance is anticipated from that field.

The greatest threat is at Kettleman Hills, where the Milham Exploration Company brought in their Elliott No. 1 well a few months ago at a depth of 6,800 feet, making approximately 80,000,000 cubic feet of natural gas having a gasoline content of approximately one gallon, and 4,000 barrels of 60 gravity oil which contains 95 per cent of gasoline.

RECENTLY another well was completed on this same structure, at a point seven miles from the first well, by the General Petroleum Corporation, whose Ochsner No. 2 was completed at the same depth on a production test, producing 30,000,000 feet of gas and approximately 1,000 barrels of the same kind of oil.

The Texas Company has built a plant to handle the gas from the Milham well and this plant is producing approximately 50,000 gallons of gasoline a day at the present time and is still not treating all of the gas. About twenty wells have started drilling to this sand, with any number of locations having been made in addition.

When it is considered that the Kettleman Hills structure is approximately thirty miles in length, the magnitude of the possible field may be imagined. It is thought that neither of the wells which have been com-

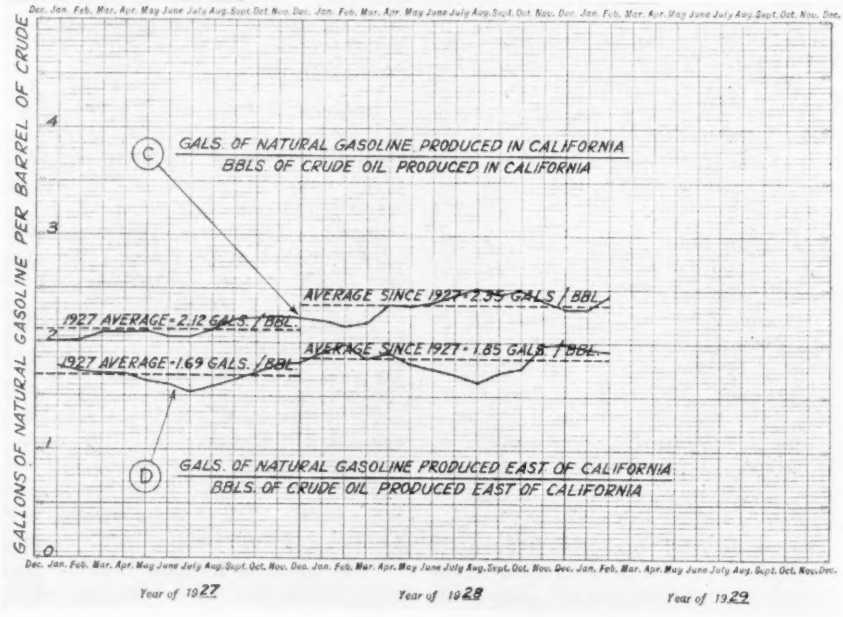

GALLONS OF NATURAL GASOLINE PER BARREL OF CRUDE
Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
4
3
2
1
0
C
GALS. OF NATURAL GASOLINE PRODUCED IN CALIFORNIA
BBLS. OF CRUDE OIL PRODUCED IN CALIFORNIA
AVERAGE SINCE 1927 - 2.35 GALS. / BBL.
1927 AVERAGE - 2.12 GALS. / BBL.
AVERAGE SINCE 1927 - 1.85 GALS. / BBL.
1927 AVERAGE - 1.69 GALS. / BBL.
D
GALS. OF NATURAL GASOLINE PRODUCED EAST OF CALIFORNIA
BBLS. OF CRUDE OIL PRODUCED EAST OF CALIFORNIA
Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
Year of 1927
Year of 1928
Year of 1929

Fig. 2—Gallons of natural gasoline produced per barrel of crude. In California the production of natural gasoline per barrel of crude is greater than east of the Rocky Mountains and has been rising since 1927

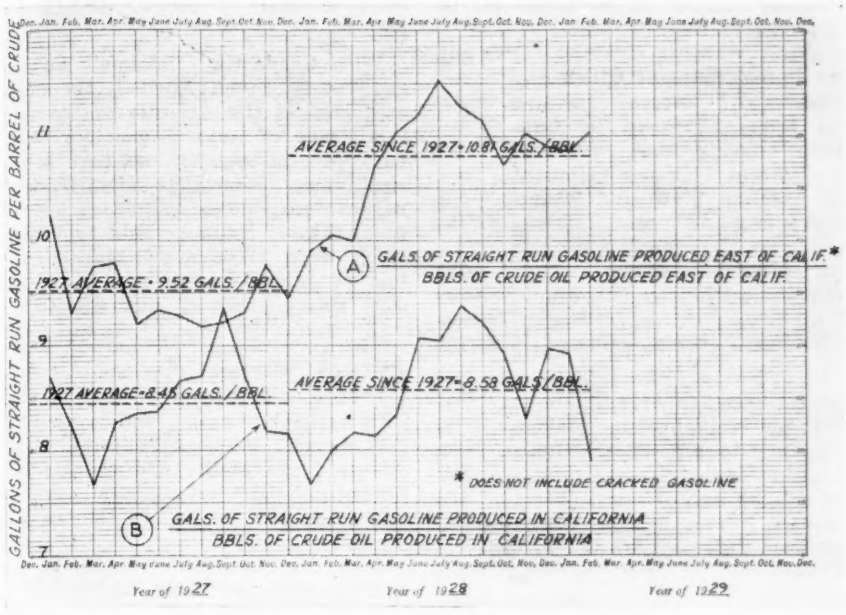

GALLONS OF STRAIGHT RUN GASOLINE PER BARREL OF CRUDE
AVERAGE SINCE 1927 = 10.81 GALS./BBL.
1927 AVERAGE = 9.52 GALS./BBL.
A
GALS. OF STRAIGHT RUN GASOLINE PRODUCED EAST OF CALIF.*
BBLS. OF CRUDE OIL PRODUCED EAST OF CALIF.
1927 AVERAGE = 8.45 GALS./BBL.
AVERAGE SINCE 1927 = 8.58 GALS./BBL.
* DOES NOT INCLUDE CRACKED GASOLINE
B
GALS. OF STRAIGHT RUN GASOLINE PRODUCED IN CALIFORNIA
BBLS. OF CRUDE OIL PRODUCED IN CALIFORNIA
Year of 1927
Year of 1928
Year of 1929

Fig. 3—Gallons of straight run gasoline produced per barrel of crude. East of California the production of straight run gasoline obtained from a barrel of crude is greater than in California

pleted has really drilled into the main body of the oil sands yet and indications point to the fact that this may be the country's greatest oil field. With the large quantities of gas available from these wells it can readily be seen what effect this field might have on the natural gasoline production of California.

Recent cooperation in the oil industry in connection with the conservation of the oil and gas resources of the country will, however, affect the production from all of the fields referred to above, as well as all other California fields, to an extent which it is impossible at this time to accurately determine. Present plans call for Santa Fe Springs production, which amounted to 189,000 barrels per day in February, to be reduced to, and held at, a maximum of 125,000 barrels per day.

Signal Hill (Long Beach) production, which was 184,000 barrels per day for February, is to be reduced to, and held at, a maximum of 140,000 barrels per day. Production of all other California fields is to be reduced approximately 10 per cent.

THE plans also embrace a complete shut in of wells at Kettleman Hills and a cessation of all drilling in that field. The voluntary shutdown measures will be reinforced considerably by the gas conservation law which is now up for final reading in the State Senate and will undoubtedly be passed in the next week or so.

Based on previous experience with shut in production, the quantity of natural gas produced will not be decreased in direct proportion with the oil, and the natural gasoline production, therefore, can not be expected to decline in the same ratio. It is highly probable, however, that if the program does go into effect as contemplated the natural gasoline production will be decreased approximately 8 per cent.

Since statistics for the year 1928 show that 662,000 barrels, or an average of 5 per cent of the total production for the year, went into storage during the year, and statistics for the month of February, 1929 show that 7 per cent of the total month's production went into storage, the reduction of 8 per cent referred to above would have a very important effect on the California natural gasoline production. In connection with the 5 per cent mentioned above which went to storage during the year, it must be borne in mind that this does not represent the total surplus, inasmuch as the shipments of natural gasoline which have been made to Atlantic Coast ports and other points outside of California would also have gone into storage if they had not been disposed of in that manner.

While it is impossible to obtain accurate figures on the quantity so shipped, it is estimated that these shipments would amount to about 3 per cent of the total production. This would mean, therefore, that there was a surplus over and above that actually utilized in blending up motor fuel of approximately 8 per cent of the total production during the year. Therefore, if the conservation program actually is adhered to production of natural gasoline will probably just about equal the amount which will be currently utilized in blending up finished motor fuel.

The natural gasoline in storage is practically all held by refiners, and in a majority of cases is stored in the form of blends of natural gasoline and straight run gasoline. At times these blends will contain as much as 60 per cent or 70 per cent of natural gasoline. During the past year for the first time large quantities of natural gasoline have also been stored in ordinary tight top 55,000 and 80,000-barrel tanks. Recovery of the gasoline so stored will run from 90 per cent to 94 per cent, and practically all of these storage tanks are connected to vapor recovery systems.

ANOTHER point to be taken into consideration in connection with the apparent surplus as shown by the amount going to storage during the year 1928 is the fact that at the end of February, 1929 there were 21,810,000 barrels of refinable crude in storage in California, which would contain 5,450,000 barrels of straight run gasoline if we assume the crude to have an average gasoline content of 25 per cent.

Since the average blend of straight run and natural gasoline in California for all purposes has been averaging 20 per cent of natural gasoline, this 5,450,000 barrels of straight run would represent 80 per cent of the finished motor fuel, which would amount, therefore, to approximately 6,800,000 barrels. The difference between the 6,800,000 and the 5,450,000 would represent 1,350,000 barrels of natural gasoline which would be necessary to blend with the straight run contained in the crude in order to produce the finished motor fuel. The natural gasoline in storage, therefore, is approximately only sufficient to take care of blending up the gasoline contained in the crude which is in storage at the present time.

It has been previously mentioned that the average blend of natural gasoline with straight run to produce finished motor fuel has averaged 20 per cent in California in the past. This is an average of the percentage of natural gasoline used in blending up all of the different commodities which may be shipped by California refiners. This includes commercial motor fuel distributed on the Coast, various grades of motor fuel shipped to the Atlantic Coast, and various grades of motor fuel exported to foreign countries.

During the year 1928, 50 per cent of the motor fuel produced at California refineries was distributed to the public on the Pacific Coast; 25 per cent was shipped to Atlantic and Gulf ports; 12½ per cent was shipped to Atlantic foreign ports, and 12½ per cent was shipped to Pacific foreign ports.

U. S. Motor specification gasoline manufactured from California crudes need only approximately 8 per cent

to 10 per cent of natural gasoline to bring it up to specification, and the maximum percentage used is, perhaps, 15 per cent. These percentages vary considerably, depending upon the crudes from which the straight run gasoline is obtained.

Straight run from Santa Fe Springs crude does not really need any natural gasoline to bring it up to U. S. Motor specification. Perhaps the average percentage used in bringing straight run up to U. S. Motor specification would be 10 per cent. Commercial motor fuel as distributed in California will probably contain from 18 per cent to 20 per cent of natural gasoline.

Export grades of gasoline for shipment to Europe will probably contain as much as 35 per cent or 40 per cent of natural gasoline. The majority of California major refiners are utilizing a maximum of natural gasoline in producing their finished motor fuels, and there does not seem to be much likelihood of increasing the amount used unless California natural gasoline manufacturers all increase the recovery of their gasoline to 94 per cent or 95 per cent.

In addition to the natural gasoline utilized in blending up finished motor fuel, a number of cargoes of straight natural gasoline have been shipped to Atlantic Coast and Atlantic foreign ports during the past year. The natural gasoline so shipped has had an average recovery of 96 per cent. One company has two tankers which are more or less continuously in this service. They are equipped with vapor recovery systems.

In addition to the shipments of straight natural gasoline, large quantities of natural gasoline have been shipped in the form of blends containing as much as 75 per cent of natural gasoline and 25 per cent of straight run gasoline. A number of these shipments have been made by California companies who are affiliated with eastern companies. A number of other commodities, such as aviation gasoline and various solvents, have also been manufactured from natural gasoline and shipped.

ONE question which interests the Mid-Continent manufacturer of natural gasoline is whether or not the California refiner is able to ship natural gasoline to the Atlantic Coast in competition with Mid-Continent natural gasoline, and, if so, he is interested in knowing how the delivered cost would be arrived at. Whether or not the delivered price of California natural gasoline at Atlantic ports will compete with Mid-Continent natural gasoline depends upon the price which the California natural gasoline manufacturer or refiner is willing to accept for his product at any given time. The method of computing the delivered cost would be somewhat as follows:

	Per gal.
The lowest price at which any quantity of natural gasoline has been purchased in California during the past few months was 6½c per gallon at the gasoline plant for 90 recovery gasoline	$.065
Add the transportation cost from plant to refinery	.0025
Add loss during transit, 5%	.003
Delivered cost at refinery	$.0705

In order to make this 90 recovery natural gasoline of suitable specification for shipping in tankers it is necessary to top off through a fractionating column a certain percentage of the lighter ends. Most of the material which has been so shipped has been 96 recovery, and in order to produce 96 recovery gasoline from average 90 recovery gasoline it is necessary to top off about 20 per cent of the lighter constituents. Depending upon circumstances, the portion which is topped off is wasted, used for fuel, or varying percentages of it may be recovered and utilized by blending with other natural gasoline or straight run.

At least two of the major companies are manufacturing straight 96 recovery gasoline in all their plants at the present time. The balance are manufacturing gasoline having a recovery of approximately 88 per cent to 92 per cent. If the natural gasoline is 96 recovery to begin with, of course it does not need to be topped for shipment. The losses suffered by different refiners, therefore, in making shipments of natural gasoline will vary, depending upon the natural gasoline which they are receiving and upon the percentage of tops which they can recover and utilize.

The examples given below will give a rough idea of how the delivered cost on the Atlantic Coast may be computed with no loss, 10 per cent loss and 20 per cent loss.

100 gallons of the natural gasoline at $.0730, value delivered at the refinery—$7.30.

If 90 gallons of 96 recovery natural gasoline were recovered from the 100 gallons the cost per gallon of the 96 recovery natural gasoline would be $7.30 divided by 90, or $0.810 per gallon.

With Grade "A" Oklahoma natural gasoline at 8c on April 1, the delivered cost at the Atlantic seaboard of this grade of natural gasoline would be approximately 13c, so that it can readily be seen that if California natural gasoline is valued as low as 6½c, that it could be sold in competition with Oklahoma natural gasoline at Atlantic ports even if 20 per cent was topped off and wasted.

SINCE the major companies produce such a large portion of their own natural gasoline, and the cost of this natural gasoline is usually low, due to large plants and short hauls, large quantities of natural gasoline may continue to invade the eastern markets at such times as California refiners have a definite surplus of natural gasoline on their hands.

The constantly increasing production of lighter or higher gravity crudes from the deeper sands in California is gradually tending to decrease the quantity of natural gasoline needed for blending up finished motor fuel to specifications. In general, the lighter the crude oil produced the larger the quantity of natural gasoline produced per barrel of crude.

Since most of the new crude production being obtained is lighter than that formerly obtained in California, both of these factors point to an increasing surplus of natural gasoline on the Pacific Coast. More efficient methods of extraction and the fact that practically all of the gas available for treatment is being treated in gasoline plants have likewise contributed to an increase in the number of gallons of natural gasoline produced per barrel of crude oil produced.

Figure 2 shows that there is a definite relation both in California and for the whole United States between the natural gasoline produced and the crude oil produced. At the present time there are approximately 2.40 gallons of natural gasoline produced per barrel of crude oil produced in California. This includes both light and heavy oil production. It will be noted, also, that while California produced 2.40 gallons of gasoline per barrel of crude, the produc-

	Loss 0%	Loss 10% 90% recovered	Loss 20% 80% recovered
	Per gal.		
100 per cent recovered	$0.0730	0.0810	0.0910
Transportation from refinery to shipping terminal	0.0025	0.0025	0.0025
Loss in transportation and loading—2 per cent	0.0015	0.0016	0.0018
*Tanker rate per gallon on refined oil to North Atlantic ports	0.0167	0.0167	0.0167
Delivered cost f.o.b. North Atlantic ports	$0.0937	0.1018	0.1120

*Tanker rates on refined oil in recent months have been as low as 70c from California to North Atlantic ports, which amounts to 1.67c per gallon.

tion for that portion of the country east of California is about 1.9 gallons per barrel. This also tends towards a greater surplus of natural gasoline in California than in the rest of the country.

It will be noted from Figure 3 that the production of straight run gasoline per barrel of crude produced in California has averaged 8.58 gallons for the last fourteen months. Assuming that all of the straight run gasoline produced was blended up currently with all of the natural gasoline produced, the finished motor fuel, which is a blend of the straight run and the natural gasoline, would be 8.58 gallons of straight run plus 2.35 gallons of natural gasoline, or a total of 10.93 gallons of finished motor fuel, and the natural gasoline would represent 21.5 per cent of the blend.

SINCE the average amount of casinghead blended with straight run into finished gasoline has actually averaged about 20 per cent of the total finished gasoline produced during the period when no shipments of straight natural gasoline were being made from the West Coast, the surplus natural gasoline at the present time would be represented by 21.5 per cent minus 20 per cent, or 1.5 per cent. 1.5 per cent divided by 20 per cent is 7.5 per cent, or, in other words, the surplus thus determined would amount to 7.5 per cent of the total natural gasoline production. This checks fairly well with the 8 per cent referred to previously as the approximate total surplus during the last year.

Figure 4, the data for which is obtained from Figures 2 and 3, shows the average percentages of natural gasoline available for blending up finished motor fuels during the past two years in California and in the territory east of California. It will be noted that the percentage of natural gasoline available in California for this purpose increased during the year 1928, while the percentage available in the rest of the country showed a slight decrease. It will also be noted from these figures that there is approximately one-third more natural gasoline available for blending in California than there is in the rest of the country, this figure being obtained as follows:

$20\% - 15\% = 5\% \div 15\% = 33\text{-}1/3\%$

These figures indicate that there is much more liable to be a surplus of natural gasoline in California than there is east of California.

Unfortunately, while the figures for the production of natural gasoline and the production of motor fuel are probably quite accurate, the exact amount of natural gasoline which is utilized each month and the exact amount which goes into storage each month, as reported by the Bureau of Mines, are apt to be slightly in error due to the fact that some natural gasoline is carried in storage as a high percentage blend with straight run and some of the reporting companies are apt to include the excess natural gasoline in such blends in the figures for motor fuel in storage.

It is trusted that this outline of the California natural gasoline situation will be of some interest and

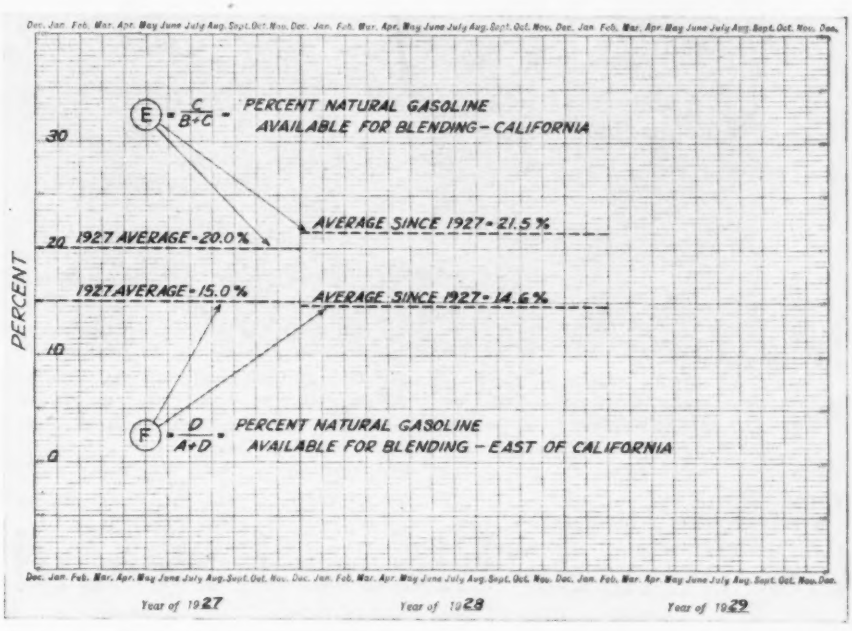

E = C/B+C = PERCENT NATURAL GASOLINE AVAILABLE FOR BLENDING – CALIFORNIA
AVERAGE SINCE 1927 = 21.5 %
1927 AVERAGE = 20.0 %
1927 AVERAGE = 15.0 %
AVERAGE SINCE 1927 = 14.6 %
F = D/A+D = PERCENT NATURAL GASOLINE AVAILABLE FOR BLENDING – EAST OF CALIFORNIA
PERCENT
30
20
10
0
Year of 1927
Year of 1928
Year of 1929

Fig. 4—Comparison of percentages of natural gasoline available for blending up finished motor fuels

value to those manufacturers east of the Pacific Coast, although the situation will be affected to such a great extent by the manner in which the oil conservation program is carried out that it is impossible to draw any very exact conclusions at the present time. The general situation in California may at the present time be summarized as follows:

1. Natural gasoline will continue to be shipped to the Atlantic Coast and other points by those companies in California who have eastern affiliations, at such times as they, individually, have surplus natural gasoline on hand.

2. Production of natural gasoline in California can be expected to increase approximately 25 per cent, or 500,000 gallons per day, by the end of 1929 if none of the conservation measures go into effect.

3. Production of natural gasoline in California can be expected to increase approximately 15 per cent if all of the conservation measures are effective except in the Kettleman Hills field.

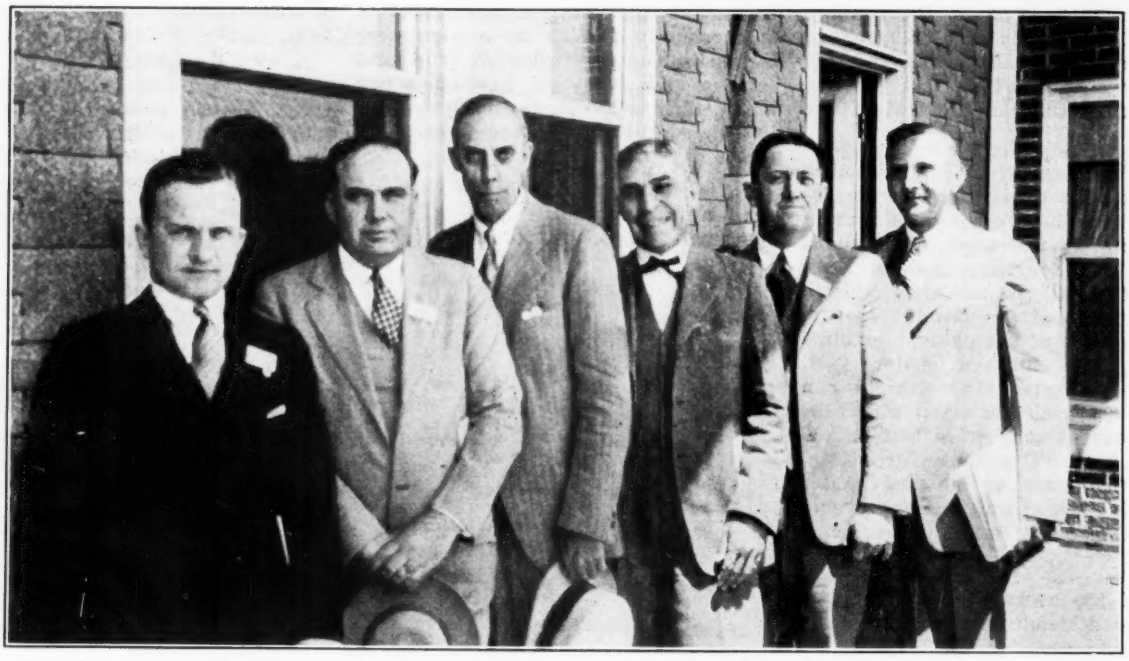
4. Production of natural gasoline in California can be expected to increase approximately 10 per cent if none of the conservation measures are effective except in the Kettleman Hills field.

5. Production of natural gasoline in California can be expected to decrease to the point where production and current utilization for blending are equal, provided all of the conservation measures are effective as planned.

6. The probable actual result of the contemplated conservation measures will be somewhere between the extremes above mentioned, and I believe it would be safe to estimate that the production of natural gasoline during the year will probably show a decrease of approximately 4 per cent. Since the total surplus amounted to 8 per cent, there would still be a surplus of 4 per cent, which would amount to approximately 80,000 gallons, or 2,000 barrels of natural gasoline per day.

THIS would amount to about one tanker load per month and I believe that it is reasonable to expect that this quantity of natural gasoline will be shipped in competition with Mid-Continent and Eastern natural gasoline during the coming year. The quantity so shipped would have the same effect on the Mid-Continent market and prices as if the production of natural gasoline east of the Pacific Coast were to be increased 2.4 per cent.

7. An appreciable increase in the export of finished motor fuels to foreign ports will materially alter the entire situation.



The affairs of the K. O. M. A. will be handled this year by these men: Left to right—Dean Kimmel, Hiawatha, first vice president; R. M. Marks, Baxter Spring, fourth vice president; A. C. Carpenter, Ottawa, president; A. W. Long, Manhattan, treasurer; C. E. McIlvain, Phillipsburg, second vice president, and J. A. Motter, Wichita, secretary. Francis Cheatum, Kingman, third vice president, could not be located when the picture was taken

Carpenter Elected President of Kansas Oil Jobbers for Fifth Term

By Allen S. James
N. P. N. STAFF WRITER

WICHITA, May 3

WHEN the Kansas Oil Men's Association gets a group of good men into official positions they believe in keeping them there. Take, for example, the election of officers at the fifteenth annual convention here May 2 and 3.

A. C. Carpenter, head of the Lesh Oil Co., Ottawa, was reelected president, and accordingly will begin his fifth term. A. W. Long of the Long Oil Co., Manhattan, for the fifteenth time was reelected treasurer. John A. Motter, Wichita, for the seventh time was elected secretary.

Other officers elected at the business session the morning of May 3 were:

Dean Kimmel, Kimmel Oil Co., Hiawatha, first vice president; C. E. McIlvain, McIlvain Oil Co., Philipsburg, second vice president; Francis Cheatum, Cheatum Oil Co., Kingman, third vice president, and R. M. Marks, Cummingham & Marks Oil Co., Baxter Springs, fourth vice president. Mr. Marks was reelected.

The two-day meeting which opened at the Broadview hotel, May 2, consisted of a well arranged program of talks and entertainment. Secretary Motter did not specialize on any one subject or topic in preparing his program. Subjects covered ranged from credits to chemistry.

The proposed Code of Ethics of the A.P.I. developed probably more discussion than did any other single subject. The way for the discussion was paved by Warren C. Platt, editor of NATIONAL PETROLEUM NEWS, in the course of his talk on "Today's Conditions for the Oil Marketer."

Mr. Platt told the association members that the greatest thing before the industry was the fact that it had decided to try and control intelligently the things it already had developed, and that the measure of control will spell profit or loss for this year.

He urged oil men to figure intelligently on their per cent of increase in business each year. Many large companies, Mr. Platt said, had in the past ignored this definite per cent of increase but they were now beginning to recognize it as an economic factor in the development of business.

Mr. Platt also urged oil men to check more into the detail of their own business and to keep their eyes on their own business rather than trying to watch the competitor all the time. He said the Code of Ethics was not a secret thing hatched behind closed doors with the idea of hamstringing the oil business.

Ray M. Irwin, president of White Eagle Oil & Refining Co., Kansas City, and chairman of the Kansas regional code committee, led the discussion on the code and answered numerous questions. The trend of questioning apparently indicated several jobbers present had been of the opinion the code would not benefit the small oil man, but was made primarily for the major companies. Before the close of the discussion a majority of those present, however, had expressed at least qualified approval of the code.

The morning of the first day of the convention was given over to registration, and to a meeting of the Independent Petroleum Distributors As-

sociation which was formed a few weeks ago in Kansas for the purpose of handling a branded gasoline and motor oil. This association heard explained the plan of the Dixie Distributors, Inc. which has been formed in several of the Middle Western states. Indications were the Kansas association would become affiliated with the Dixie organization.

Following a luncheon on the roof garden of the broadview, the K.O.M.A. convention was called to order with Mr. Carpenter presiding. W. Z. Brown, credit manager of the Producers & Refiners Corp., Independence, Kan. talked on "Credit and Accounting Economy." Mr. Brown said one of the greatest difficulties in credit was the tendency for the man to whom the credit was extended to draw too heavily on the receipts obtained from the merchandise which he bought on credit, and put them into fixed items leaving him nothing with which to buy new merchandise. He said the idea of excessive stocks on a rising market was passing.

Mr. Brown particularly urged oil jobbers to know how much to credit a man regardless of who he was and to list accounts each month of every person who owed the company money. This list should show just how long the account had been open. The sales and credit departments, Mr. Brown said, should have the same perspective.

H. H. Ragle, president of the Michigan Oil Men's Association, Jackson, Mich. discussed "Some Oil Jobbers You Have Known." Many of these jobbers, Mr. Ragle classed as the "Ex-Men." They were ex-grocers who always had to sell at a little lower price than the other fellow; the ex-premium guys as he called them, the ex-bankers, and ex-financial wizards who invariably failed to figure depreciation and overhead and accordingly thought they could sell for less than their competitors, and finally the sanctimonious fellow who says "Amen" to every good proposal at a meeting and then gives secret rebates.

"Any damn fool can cut prices," Mr. Ragle declared. "But it takes courage to say 'No.'"

The election of officers was held the morning of May 3, followed by a general meeting at which C. Y. Hinchey, executive manager of the Independent Oil Men of America outlined the aims of that association under the new regime. He said he had only a few minutes before the meeting received a telegram stating that the Red Hat emblem had been accepted by the Bureau of Patents.

One of the new policies which the I.O.M.A. will try, Mr. Hinchey said, was the formation of group organizations to work under the general association. He said that the cost of membership in the association has been cut in half.

"Chemistry and Industry" was the subject of a talk by C. C. Wagner, of the Decotah Oil Co., Madison, S. D. His talk was the first on the program following the luncheon the second day of the convention.

That this is a chemical age in which we now live was illustrated by Mr. Wagner with cotton as an example. With a few acids, test tubes and glasses Mr. Wagner showed how gun cotton was made, told how Rayon was manufactured and outlined several scores of uses to which cotton has been put in the past few years because of the work of the chemist in the laboratory.

Tying the illustration of cotton and its uses to the oil industry, Mr. Wagner declared that there were enough corn cobs and peanut hulls thrown away or burned each year to make enough of a new type of motor fuel to run every automobile in the United States. The petroleum industry, he said, may be standing with one foot on a volcano.

An interesting description of the oil business in South America was given by Jack Nourse of the Nourse Oil Co., Kansas City, who recently returned from a trip to that country.

New Wells Partly Offset California Proration

LOS ANGELES, May 6

NEW completions, which flow unrestrained for 10 days before coming under the jurisdiction of F. C. van Deinse, oil umpire of California, the second week of prorating practice, offset a considerable part of the barrelage cutback accomplished in the state's curtailment program.

Daily average production of California, the week ended May 4, was between 760,000 and 765,000 barrels, as compared with 787,700 barrels shown by American Petroleum Institute figures for the week ended April 27.

Net reduction since prorating began, April 22, has been between 30,000 and 35,000 barrels in comparison with the recent high daily average of 796,600 barrels produced in the week ended April 20.

Notwithstanding such a statistical picture, the umpire had succeeded in curtailing approximately 80,000 barrels daily production as compared with what the state's daily average yield would have been without prorating practice in effect.

The first general prorating order, in effect from April 22 to May 4, contemplated curtailment of 129,530 barrels daily in Los Angeles Basin and California Coast division fields. It took no account of a contemplated cutback of 15,626 barrels for San Joaquin Valley fields, which became effective May 4 and which will appear in production averages for the first time in the week which ends May 11.

Umpire van Deinse's second order calls for a total cutback in all fields of California of 143,118 barrels daily, the new figure being adjusted to changes in individual field potentials and allotted productions in the Los Angeles Basin.

Eventually it is hoped to bring California production down to approximately 650,000 barrels daily.

Because of new completions, daily average production figures showed an increase at Ventura Avenue and showed a drop of only 10,000 barrels daily at Santa Fe Springs in the week ended May 4 as compared with the previous seven-day period.

Santa Fe Springs, averaging about 160 000 barrels daily, was in the approximate position it was the week before prorating was begun. The first week of prorating it showed an increase of 10,000 barrels to 170,000 barrels daily.

Ventura Avenue field gained approximately 3000 barrels to 59,000 barrels daily. Long Beach showed a drop of approximately 5000 barrels daily to 175,000 barrels; Inglewood was cut 1000 barrels; Seal Beach 5000 barrels; Huntington Beach 2000 barrels; and other fields smaller quantities of daily production.

Per cent reductions contemplated by prorating orders are being met by the larger companies and many of the smaller operators, in most fields, yet the Santa Fe Springs problem is far from solved.

Production is being approximately maintained, and may mount higher, at Santa Fe Springs for two reasons: (1)—some of the operators have failed, thus far, to observe prorating orders; and (2)—all types of companies are completing flush wells that flow unrestrained for 10 days before coming under jurisdiction of the umpire.

Even after new completions come into prorating any considerable number of them will increase the daily average production of a company, lease or field, because they take curtailment only in the amount of the per cent reduction applying in the area.

Review of Late Production News

CRUDE oil production dropped 20,800 barrels daily average during the week ended May 4 according to estimates of the American Petroleum Institute.

Imports of crude fell 31,428 barrels, bringing total crude supply down 52,228 barrels to 2,885,850 barrels per day.

In California daily average production fell 36,500 barrels to 751,200 barrels per day. Santa Fe Springs production was down 10,000 barrels and Elwood, Long Beach and Seal Beach each was down 5000 barrels daily average.

Oklahoma production increased 12,800 barrels daily average. Little River field was up 5,900 barrels and Earlsboro 2,850 barrels.

West Texas production dropped 4,250 barrels daily average and the state as a whole 4,250 barrels.

California

THE big fly in the proration ointment that is being prepared by Umpire F. C. van Deinse, under the name of general order No. 2 to be effective May 4 at 7 a.m., is the addition to "current allowable production" of new oil from completions.

Under present plans a new completion is allowed to flow wide open for ten days before coming under the proration restrictions. Recent completions have been so numerous that the effect of shut in production is barely noticeable in the field totals. When this wide open run is eliminated or reduced, curtailment will begin to show some results, as the majority of the operating companies are rapidly coming into line.

California crude oil production showed a drop of only 29,100 barrels giving a total production of 758,600 barrels for the week ending May 4. This drop is only a fraction of the cut of 145,156 barrels required to bring the state production down to the allowed figure of 648,153 barrels under general order No. 1.

Santa Fe Springs with two new completions for 11,054 barrels of flush oil failed to show a substantial cutback in production. The field total was 163,234 barrels, as compared with 170,000 barrels for last week. The natural decline amounted to 5823 barrels from 112 producing wells.

Signal Hill showed a drop of 4862 barrels to give a total field production of 183,823 barrels, as against 188,685 barrels for last week, six new completions adding only 6358 barrels. When the curtailment orders are 100 per cent efficient, this field should have 140,000 barrels excluding production that is due to completions.

Inglewood, Huntington Beach, and several other fields in the Los Angeles Basin have shown a reduction of nearly 10 per cent. Inglewood dropped from 23,500 barrels to 22,000 and Huntington Beach from 44,500 to 42,000 barrels.

Ventura Avenue's daily average crude oil production dropped from 56,500 barrels to 54,000 barrels, notwithstanding the influx of new oil through several completions. This field was a question mark in proration plans, as operators there had already pinched in the field to a certain extent for repressuring purposes, and claimed that any further shut in would seriously handicap them.

Oklahoma-Kansas

THE starting of an active drilling campaign around the Simms Oil Co., wildcat strike near Asher, featured the week in Oklahoma. Twenty-five drilling wells are now under way in the vicinity of the new well, which is 20 miles due south of Shawnee.

Several town lot locations have been made in the east edge of Asher. The well is apparently justifying the play having increased its production to 3600 barrels daily when agitated.

In Kansas two wildcats, one in Sedgwick County the most active of Kansas oil districts at present and the other in Edwards County in the western part of the state were the features of the week. The Sedgwick County well, that of Patton and Wentz in the NW NE of 6-26S-2E topped the chat pay on top of the lime at 3005 and at five feet in was swabbing 80 barrels an hour with some water. The well, which is six miles east of the Valley Center pool, is being tubed to pump.

The other wildcat is in the central western part of the state between the towns of Kinsley and Pratt. It is the British American Oil Co. No. 1 McCarthy in the NE NW of 31-25S-17W which is making 10,000,000 cubic feet of gas and spraying 40 barrels of oil daily from the pay at 4535 to 4540.

Texas, New Mexico, Louisiana

BUT little change was registered in the producing fields of Texas and New Mexico during the past week. In Jack County Panhandle Producing and Refining Co. deepened its No. 1 Leffel to a total of 3100 feet, the well responding with a production of 47 barrels an hour. The new well, which extends the Bryson pool a mile and a quarter north, topped the sand at 2988 feet.

The Texas-Canadian No. 1 Kloh a Winkler County wildcat in Sec. 35, Block 46, Township 1, North T and P survey, which is being closely watched was shut down at a total depth of 3163 in anhydrite.

Wyoming, Montana

THE Presidential edict concerning the development of oil and gas permits already issued on public domain, and the non-issuance of any more such permits, has caused holders of those in good standing to be up and doing, and the result is that Rocky Mountain states territory will probably see a drilling boom such as it has not experienced in many years.

Starting in Montana, and extending down through the Dakotas, Wyoming, Idaho, Utah, Colorado, Arizona, New Mexico, and western Kansas and Nebraska, operators are busily engrossed in getting rigs up and crews at work before the time expires.

In eastern Wyoming, in Weston county, the Wyoming Drilling Syndicate has apparently made an entirely new discovery: when the company started to pull casing this spring preparatory to cleaning out its hole on the Howard structure, it discovered about 2000 feet of light green oil. The well is bottomed at 4350 feet where it has been standing since last December.

I. C. C. Hears Arguments in General Oil Rate Investigation

WASHINGTON, May 6

THIS week the Interstate Commerce Commission begins its study of railroad freight rates on petroleum and its products from the Mid-Continent refining groups to that part of eastern territory east of the Indiana-Illinois line to the Atlantic coast. It will study also rates into the southeast, and between points in the southeast.

As preparation for making a disposition of the question of what rates petroleum and its products shall bear, the members of the rate body listened to three days of argument, by more than two dozen lawyers. An almost unbelievably large number of phases of the three rate structures was discussed. Only the highest of the high points can be touched upon.

Railroad revenue in excess of $100,000,000 is involved in the matter. The precise question before the commission was as to whether it should adopt the recommendations made to it by its examiners who heard the testimony or do something else. Broadly speaking not one oil company or one railroad involved in the case approved the work of the examiners. Everybody had suggestions of changes to make.

The proceeding arose under the Hoch-Smith resolution, adopted by Congress in 1925 directing the Commission, in view of the depression in agriculture it said existed, to give products of agriculture the lowest possible lawful rates consistent with the maintenance of an adequate transportation system.

After nearly two years of testimony taking the examiners recommended reductions, which, if made, probably will take $4,000,000 a year from the eastern and southern railroads.

They found no reasons why rates on petroleum and its products should be put up, except in spots, on account of the declared depression in agriculture. Railroads east of the Mississippi disagreed with that view. The southern railroads, in particular, said the record warranted increases in many parts of their territory.

As the arguments developed the case turned out to be a contest between the southwestern railroads, Mid-Continent, Texas, Arkansas and Louisiana refiners on one side and eastern refiners, southern and eastern railroads on the other. M. G. Roberts of the St. Louis-San Francisco, declared that eastern and Mississippi River refiners were fighting to keep the Mid-Continent refiners out of the territory east of the Mississippi.

"The Shell would like to see a rate of 80 cents per 100 pounds on refined products from group 3 to Chicago in place of the 36 cent rate now in effect" declared Mr. Roberts. "The southwestern lines maintain these low rates of 30.5 cents to St. Louis and 36 cents to Chicago enable their customers to remain in business. We have been successful to the extent of keeping refineries in the Mid-Continent field, the place of big production and small consumption against the wishes of the eastern refineries who want to keep the Mid-Continent refined products out of the territory of big consumption."

James F. Lawrence, for the Mid-Continent refiners, in his closing argument, said that the situation in the oil industry now was about as it was in 1911 when the Supreme Court of the United States dissolved the Standard combination, the various Standards and other big refiners obtaining their transportation preferences from pipe lines.

The pipe lines, he pointed out, were common carriers under the control of the Commission even as the railroads were under its control.

His main proposition was that the rate body, in 1915 and again in 1925, in the Mid-Continent and Indiana State Chamber of Commerce cases, allowed rates to Chicago, St. Louis and Indiana, based upon pipe line completion at St. Louis and Chicago but said that there was pipe line completion at Toledo and other points east of Chicago to which no recognition had been given.

The examiners took these rates and suggested rates to points east of Indiana, which gave some recognition to pipe line competition but as Lawrence said, not enough. Their proposal would reduce the measuring rate from Tulsa to New York from 70 to 68 cents. Lawrence said the Commission should give the Mid-Continent refiners a rate of about 50 cents to the Buffalo-Pittsburgh territory. New York, he admitted, was a market into which the Mid-Continent refiners could not expect to go on all-rail rates.

Into and within the Southeast the examiners proposed a mileage scale about equal to 25 per cent of the first class rates. The Standard and other big companies proposed a scale of about 21 per cent of first class rates. The southern railroads said that, to protect their revenues, they needed rates about 32 per cent of first class.

A TYPICAL argument in behalf of eastern refiners was that made by W. W. Collins for the Atlantic Refining Co. He said that the whole matter should be put aside until the eastern class rate case had been disposed of because east of the Mississippi river petroleum and its products took 90 per cent of fifth class rates.

He said the low rates to Chicago and St. Louis forced rates upon eastern railroads they were not willing to make and placed the refiners at the Mississippi River, such as the Shell, at a disadvantage in marketing right in their own back yards in comparison with Mid-Continent shippers.

T. M. Woodward for the Appalachian refiners and the National Petroleum Association argued against the making of such rates from the Mid-Continent as would have the effect of drying up the eastern field. Mr. Crane said the rates within Central Freight Association territory (Indiana, Michigan, Ohio, parts of Illinois, Kentucky and West Virginia) were too high and that sixth class would be more nearly proper than 90 per cent of fifth.

New Orleans refiners and southern railroads opposed rates on the low basis putting Mid-Continent products into their territory but the New Orleans lines asked for the continuance of rates enabling them to compete with the Mid-Continent in northern territory.

Oil Case Is Largest In I.C.C. History

THE general investigation of oil rates into and in the Northeast and the Southeast is the largest oil case which has been before the Interstate Commerce Commission in the 42 years that body has been in existence.

In the two years in which testimony was heard by the examiners the record was built up to a total of about 40,000 pages. On this testimony the interested attorneys wrote 12,000 printed pages of briefs and exceptions.

Chemists Discuss Gasoline Volatility But Say Nothing About Knocking

By Paul Truesdell
N. P. N. STAFF WRITER

COLUMBUS, O., May 3

VOLATILITY of gasoline and methods of measuring it were perhaps the chief points of interest in the sessions of the Petroleum Division of the American Chemical Society, which were held here April 30 and May 1 in connection with the seventy-seventh meeting of the society.

Detonation, the tendency of motor fuel to knock, was passed up entirely, although the automobile engineers generally regard this as the most serious problem confronting their own and the oil industries.

The tenor of papers on volatility seemed to indicate that reliance on the A.S.T.M. distillation method as a means of determining how a gasoline will perform in an automobile engine is losing ground and the dew-point method, or some method akin to those proposed by Sligh and James, are coming to the front.

Dr. George Granger Brown, University of Michigan, director of a research program sponsored by the Natural Gasoline Association of America, started the ball rolling on the subject of volatility with a paper prepared by himself and Emory Skinner, also of the University of Michigan entitled, "Motor Fuel Volatility."

Dr. L. B. Hitchcock, professor of chemical engineering at the University of Virginia, followed him with a paper, "Gasoline Volatility Surveyed by Distillation Data."

Dr. Brown stated that equilibrium volatility is the starting point for investigation of actual performance of a gasoline in an engine. He stated that the A.S.T.M. distillation method is not sufficient as an indicator of the volatility characteristics as they will show up in actual engine operation.

A careful investigation of the equilibrium vaporization of different gasolines was made, Dr. Brown said, using a different type of vaporizer, designed by himself to check the Sligh distillation apparatus and making a careful analysis of the compounds contained in the gasolines, so that the partial vaporization of the gasoline could be computed for different air-fuel ratios.

"This work demonstrated," the speaker stated, "that the Sligh apparatus does not approximate equilibrium conditions at low temperatures or at intermediate percentages vaporized and that it is impossible to approximate equilibrium conditions by extrapolating such data to zero rate of feed."

Professor Hitchcock stated he had carried out distillations on 55 samples of gasoline bought from filling station pumps, presumably in Virginia. These fuels were of four classes, he stated, and he classified them as "ordinary" gasolines, "high test" gasolines, "benzol anti-knock" gasolines and "non-benzol anti-knock" gasolines.

THE Petroleum Division adopted a resolution and stood for a moment in memory of L. R. Adkins, chemist with the Vacuum Oil Co., a member of the division who died suddenly of heart disease recently. The memorial resolution was drawn by C. R. Wagner, Pure Oil Co. and R. R. Matthews, Battenfeld Grease & Oil Co. The division resolved to forward a copy of the resolution to Mr. Adkins' family.

Professor Hitchcock stated that Dr. Oscar Bridgeman at the Bureau of Standards has "succeeded in definitely correlating A.S.T.M. distillation data and volatility results so that pertinent deductions regarding engine performance may now be made with reasonable accuracy from an inspection of the distillation curve.

"Using Sligh's method to obtain equilibrium air-distillation temperatures for various mixtures, empirical relationships are found to hold which give a true indication of the relative volatilities of gasoline."

The speaker stated that in more recent work of Bridgeman it has been shown that "dew points of widely varying mixtures are simply related to the corrected 90 per cent point on the A.S.T.M. distillation."

The papers of Brown and Hitchcock aroused lively discussion by Dr. Bridgeman, who described some of his work at the Bureau with the Sligh distillation apparatus, Robert E. Wilson of the Standard Oil Co. of Indiana and others.

The meeting of the Petroleum Division opened at 2 p.m. April 30, Dr. J. Bennett Hill, chairman, presiding. The first paper was by Dr. E. D. Ries, Penn State college, on "The Relation Between Physical Characteristics and Lubricating Values of Petroleum Oils."

Dr. Ries discussed work in progress at his college and the various present methods of testing lubricating oils. In conclusion he stated:

"It is hoped that the above will emphasize the fact that the empirical tests now used for petroleum oils tell far from the whole story on performance—that certain of them are of little use and should be abandoned, that others should be retained and that still others must be changed or new ones devised. In the author's opinion those to be retained, carbon residue, viscosity and viscosity-temperature coefficient (remembering that the latter is a property not necessarily characteristic of the crude) and those to be changed or devised anew, cold test, evaporation, 'oiliness,' and resistance to oxidation.

"The last two classes should furnish a satisfactory basis for evaluating the lubricating qualities of an oil. The last class includes those tests on which further research should be carried out."

S. W. Ferris, H. C. Cowles Jr., and L. M. Henderson of the Atlantic Refining Co. presented a paper on "The Composition of Paraffin Wax," in which the conclusion was stated that:

"It is believed that the evidence presented is sufficient to warrant the conclusion that there are a number (not necessarily six inasmuch as none of the fractions are strictly pure) of types of solid constituents in paraffin wax. It is fairly well established that paraffin contains a large proportion of the C_nH_{2n+2} series and these may be looked upon as the 'truest' waxes in that they exhibit, for a given boiling point, the highest melting point."

F. R. Lang, chief chemist at the Wood River refinery of the Shell Petroleum Corp. described a method developed by his company for determining the specific gravity of asphalt by means of a hydrometer, which is much simpler and more rapid than the usual pyknometer method D70-27 A.S.T.M. He stated that about 50 minutes are required for a determination by the pyknometer method while it takes but 15 minutes with the hydrometer.

Holmes Explains Conservation To Chamber of Commerce

WASHINGTON, May 3

THE fundamental theory of the American Petroleum Institute's conservation program—the production of more of essential products from a barrel of crude oil—was gone into in detail by R. C. Holmes, president of The Texas Co., chairman of the institute's general committee on oil supply and demand, before a group session on natural resources at the meeting of the Chamber of Commerce of the United States here this week.

Whereas 912,000,000 barrels of oil were used in 1928 to make the nation's gasoline, at the rate of 41.3 per cent gasoline to the barrel of crude, only 638,000,000 barrels would have been necessary had cracking been called upon to produce 60 per cent of gasoline from crude, said Mr. Holmes.

To show the extent to which the oil industry is already following methods which apply conservation to its operation, Mr. Holmes said that, at the rate of gasoline yield from crude in 1918, it would have taken 1,447,000,000 barrels of crude last year to make the necessary gasoline.

"On the 1918 scale of operations applied to 1928 we would have produced over 700,000,000 barrels of fuel oil," he said, "while actually we made 426,000,000 barrels of fuel oil in 1928, due to the greater extent cracking was used."

In commenting upon the reception by the Federal Oil Conservation Board of the institute's program calling for cutting back crude production in 1929 to the average 1928 basis, Mr. Holmes said the board had neither approved nor disapproved specifically the institute's program. "We do not know what particular plans are objectionable," he said.

In answer to questions from the floor Mr. Holmes brought out that earnings of the oil companies from 1919 to 1927—a general period of overproduction—were 3.27 per cent on the investment and that earnings in 1923 a year of overproduction were .95 per cent. He estimated a loss of $300,000,000 to the producing interests of the country in the period from 1921 to 1923.

How is curtailment of production among individual companies to be secured, was another question asked Mr. Holmes. His reply was that restrictions were to be applied in fields where the production was large, and that they would not affect fields where the wells were small in output and their full production unprofitable at present prices.

Asked as to the reason for the present spread between the price of crude oil and the price of gasoline, Mr. Holmes said this was due in part to the present policy of uncontrolled drilling, which required the oil company to drill more wells to protect its acreage than necessary to take the oil economically from the ground, which wells also were exhausted before all the recoverable oil was taken from the ground. "The present system means a maximum investment and minimum return," said Mr. Holmes. The second reason he ascribed for the spread in prices was duplication of marketing facilities.

E. J. Sadler, Standard Oil Co. of New Jersey, and a member of the institute committee on oil supply and demand with Mr. Holmes, taking part in the general discussion following Mr. Holmes' presentation, pointed out the extent to which gasoline taxes play a part in the price of gasoline to the public today. Remove the tax from the present retail price and the public would realize that gasoline has risen less in price since 1913 than almost any other commodity, said Mr. Sadler.

A brief protesting the government's policy in ending the leasing of public oil lands was read into the meeting by Aaron R. Hover, who identified himself as an independent producer of Hollywood, Calif. He said that individuals to whom permits had been granted had been lulled into a false sense of security by the former policy of the interior department in granting extensions of time in which the leases must be actually developed. He said the sudden reversal of this policy was a serious blow to independent operators on public lands. He said the right of development and discovery of oil reserves by individuals should not be withdrawn by the government, but encouraged; and that the government could still practice conservation by holding the right to control production on such lands.

The natural resources group meeting was presided over by Dr. John C. Merriam, president of the Carnegie Institute of Washington.

Adequate Geological Surveys Validate Land Permits

WASHINGTON, May 3.—In carrying out the President's oil conservation policy, the Committee of the Department of the Interior, for consideration of pending claims, has made a recommendation concerning possible equities in oil and gas cases where adequate geological surveys have been carried on. The recommendation which was approved by the Secretary of the Interior, is as follows:

"We recommend that in all cases where clear and definite evidence is filed showing substantial expenditures for reliable geological surveys upon the lands embraced in oil and gas applications and permits, or groups of applications upon the same structure or where the structure is not clearly defined upon the surface, within an area not exceeding six miles square as provided in existing regulations, that the same be regarded as a sufficient equitable basis for the allowance of the applications pending on March 12, 1929, and issuance of permits thereon, or where permits have already issued and requests for extension are timely filed, that it be regarded as sufficient equitable ground for extension of such permits.

"Geological work may be distinguished from ordinary preliminary expenditures as the latter do not operate for the benefit or enlightenment of the Government, whereas geological work supplies information which is to the advantage of and may be used by the Government in the classification and disposition of the public lands and their resources. This is to be contingent upon a showing of good faith and of responsibile diligence on the part of the applicants, permittees or those claiming through or under them."

Study Water Encroachment

WASHINGTON, May 4.—Engineers of the Dallas field office of the U. S. Bureau of Mines are working with the Texas Railroad Commission and operators of the Roberts-Settles, Texas, oil pool on a study of water encroachment. A number of water samples have been collected and analyzed for the purpose of determining the origin of the water.

Cross-sections through the field have been developed on a large scale base so that the water encroachment conditions may be graphically interpreted. Production data have been collected and sufficient engineering work completed to form a good working knowledge of the pool.

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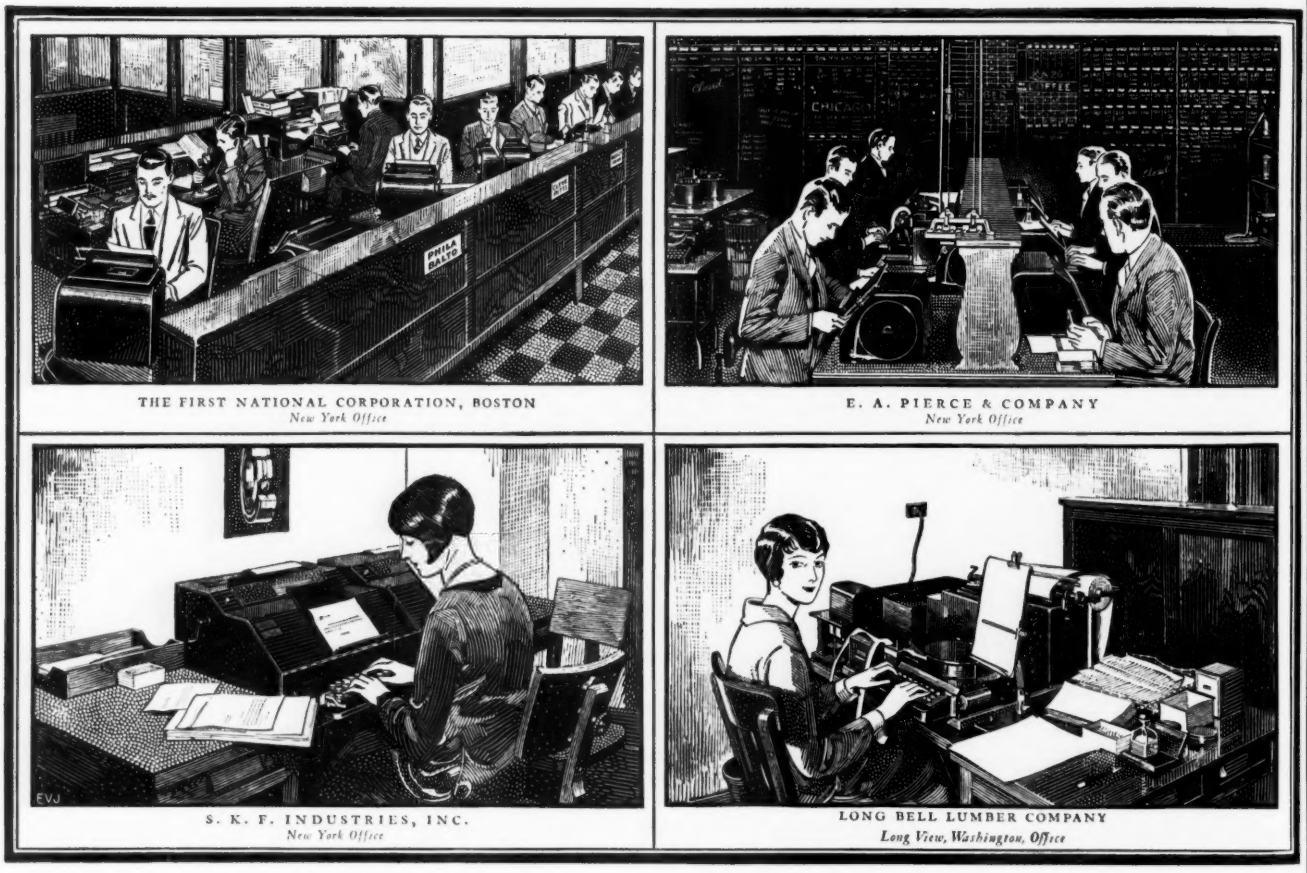

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The Editors' Viewpoint

National Petroleum News

A New Type Annual Report

WHEN W. T. Holliday finished his first year as President of the Standard Oil Company of Ohio, the other day, he sent to his stockholders an annual report which is just the opposite of any which have ever come from the Standard of Ohio and quite a bit different from those of most other big organizations.

In that report Mr. Holliday not only stated the usual facts in regard to the balance sheet and profit and loss statement, but he did so in language which the stockholder least familiar with balance sheets could understand. In addition to all this and which is more important, he told the story of what had been done in the company the past year, getting down into details that heretofore have generally been considered as confidential within a company.

He threw open the door, as it were, to not only his private office, but the private offices of all his executives. It must have made every stockholder feel that he had a personal interest in the company in addition to his investment there.

The report drew commendation from Lewis B. Williams of the firm of Hayden, Miller & Company, investment bankers of Cleveland, one of the oldest and most conservative firms in the country. Mr. Williams wrote Mr. Holliday as follows:

"I have read with the greatest interest the annual report which you have just published and sent to your stockholders. I think it is the very acme of what such a report should be. Of course it throws to the winds all of the conventional and traditional attitude of secrecy which formerly surrounded the job of management. For that I particularly commend it.

"Investment will be safer for everybody if and when there is a more complete approach in the relations of management to stockholders, which is exemplified in your attitude and report. I congratulate you most heartily. I think it is an outstanding thing."

While oil companies have been breaking away from the old-fashioned report of a few items in the balance sheet and a few words about the profit and loss and some have gone quite a way, nevertheless there can be more such reports in the oil business as Mr. Holliday put forth, just as there can be more reports in all lines of business of such a free and frank nature.

The day has passed when a few stockholders control the larger companies. The control lies with tens of thousands of stockholders. In the old days the few leading stockholders were personally informed as to what was taking place, so perhaps it wasn't necessary then to make public such detailed reports, but in these days there are no leading stockholders to speak really accurately.

The stockholders in oil as well as in other big companies, live in every town, on every block. They teach school. They run shops. They are housewives, business men and professional men. They are a fair example of the thriftier and more thinking public of this country. They are the backbone of this country. What they do, the country will do. Their very stock ownership, small as it may be, has sorted them out from the rest of the 125,000,000 people and stamped them as being capable of understanding the affairs of business and of having an appreciative interest therein if they only are given the opportunity.

Undoubtedly stocks will be still more widely distributed in years to come. Hence it is all the more urgent for the executives of big companies to devise new ways and means of keeping in the closest possible touch with those stockholders so that they will always feel that they know what is going on and in fact so that they will always know that they know just what is going on.

The executives should feel that their thousands of stockholders are constantly at their elbow, commending them for what they do that is fine and criticising them for what they may do that is in error. Without a detailed annual report and without frequent reports during the year, the executive is hopelessly out of touch with his stockholders.

Oil companies have progressed and done for the most part a good job in keeping in touch with their stockholders, but all of them could go still further and do a still better job. Because of the peculiar situation of the oil industry in the public mind, to say nothing of because of the hundreds of thousands of people who have invested their money in the oil companies, oil company executives should push still more resolutely a program of complete frankness to their stockholders.—W.C.P.

Political Efficiency (?)

MISSISSIPPI has a 5-cent gasoline tax and so has Arkansas. They have only the Mississippi river between them. Mississippi's law provides that all gasoline consumers shall pay the tax, no matter whether the gasoline is used on the roads or not. Arkansas' law allows a remittance of the tax on gasoline used in airplanes, river boats and in cultivating farm land.

There was a time when Vicksburg, Miss., got a good share of the river business, being a convenient port of call for yachts, and heavier craft plying the river trade. Now it all goes to Arkansas, in spite of the fact that the closest, sizable Arkansas port is some distance. Five cents a gallon makes a difference to any customer buying in 1000-gallon quantities.

Home Oil Co. of Vicksburg had a customer on the river once that consumed 3000 gallons of gasoline a month. Now that customer saves $150 a month by purchasing gasoline in Arkansas. Oil men of Mississippi probably lose 100,000 gallons of gasoline business a year and the state does not get the tax either.—W. K. H.

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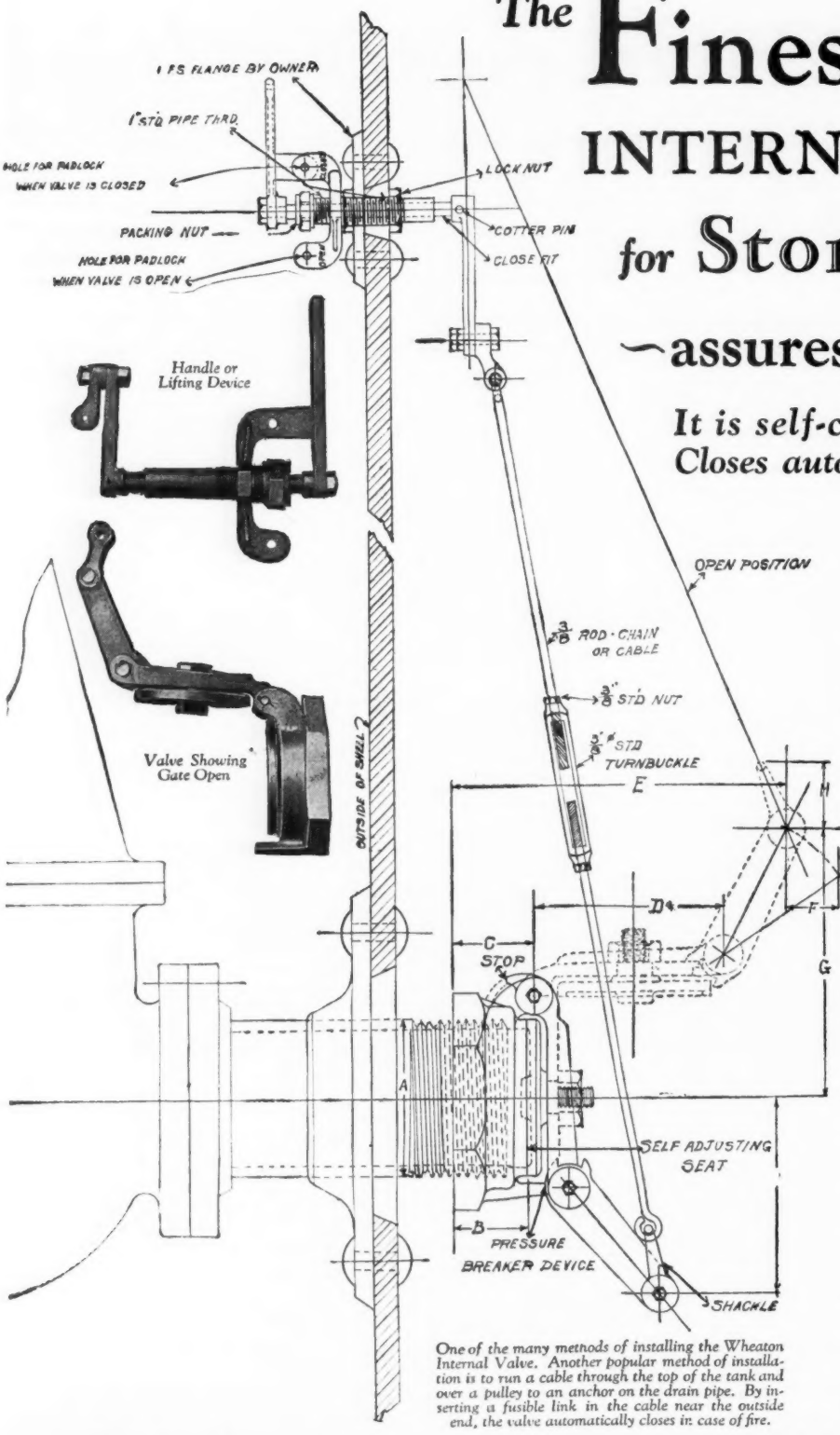

One of the many methods of installing the Wheaton Internal Valve. Another popular method of installation is to run a cable through the top of the tank and over a pulley to an anchor on the drain pipe. By inserting a fusible link in the cable near the outside end, the valve automatically closes in case of fire.

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Miss Smilch take this letter to:

Mr. Ray M. Collins,

Seminole District Umpire,

Tulsa, Okla.

Dear Ray:

As you requested, I stopped off in Bradford, Pa., on my way home from the recent conservation doings of the American Petroleum Institute, held in New York. I sounded out quite a number of the producers in the Bradford district on getting some conservation work started there, with proration, drilling restrictions, potentials and, of course, an umpire.

I was not altogether unselfish in doing this, as I have heard that umpiring is a pretty good business to be in and, having observed your methods for more than two years, felt qualified to call meetings, appoint committees and get resolutions adopted. That is to say, I had an idea that as the promoter of the industry-saving movement in that district, I naturally would be given first consideration for the job.

The stage is all set for some bang-up conservation work. About 600 strings of tools are running and, you will agree, that is far too many. California, Oklahoma and Texas well may point the finger of accusation at Bradford and say, "There is where all the trouble is." Besides the new Emery Hotel, built since either of us was in Bradford, has all modern conveniences, including rooms in which large meetings could be held.

Well, I just hate to admit that I wasn't 100 per cent successful, but I think you had best go down there and impress that crowd. I couldn't possibly exaggerate in telling how flat my arguments fell. I couldn't even get them to appoint a committee—as you know, nothing can be done without a committee, and it is better to have several of them.

One of them countered with a proposal. It was as follows: When the production in the Bradford district reaches 500,000 barrels per day, they will start a conservation movement, using the half million as the base figure to which they will restrict. As this is about 475,000 barrels higher than the present output, you can see what chance we have.

I can't say that I canvassed all the sentiment, for there was, after all, a committee appointed. It called on me at the hotel one night and said it would be just as well for me to see the sunrise in another part of the country.

What do you say if we try out our ideas on some easier place, like Wichita, Kans.?

Yrs. Very Truly

* * *

Ill health has brought to a pause the work of Arthur A. Beard, vice-president and general manager of the Tidal Oil Co. Mr. Beard resigned, effective May 1, and will devote himself earnestly to the task of regaining his physical strength.

For fourteen years he has been in the service of the Tide Water interests, the last four of which he spent in the position he has just left. He has been a leader in much of the constructive work performed jointly by Mid-Continent operators, and is considered an authority on operating practices.

Successor to Mr. Beard has not been appointed. E. H. Salrin, president of the Tidal, is acting also as general manager.

In these days of proration, field umpires are numerous. Here is a late picture of the one who first was vested with that title by a state. His appointment came in the boom days of the Cushing field. He is A. E. Watts, vice-president of the Sinclair Consolidated Oil Corp., who has much to do with the foreign interests of that company and who, by virtue of his direction of the company's marine interests, is known as the "Commodore"

* * *

Merger of the Exchange National Bank, of Tulsa, with the older but smaller Central National, places the Exchange, whose name will cover both, in first position in Oklahoma, with deposits as of March 1 of nearly $60,000,000. The Central National growth and success came under the leadership of J. E. Crosbie, who also is a highly successful oil producer.

* * *

L. J. Daly has been appointed general superintendent of The Texas Production Co., Denver. His place as superintendent for The Texas Co. in the Pampa district of the Texas Panhandle has been assumed by D. J. Gribbon.

* * *

Shell Petroleum Corp. has combined its producing district organizations of Drumright and Stroud. L. E. Cook, who was in charge of the Stroud district, has been moved to Drumright and directs the combined district. J. Q. Adams, who had charge of Drumright, has been transferred to Wilson, southern Oklahoma.

* * *

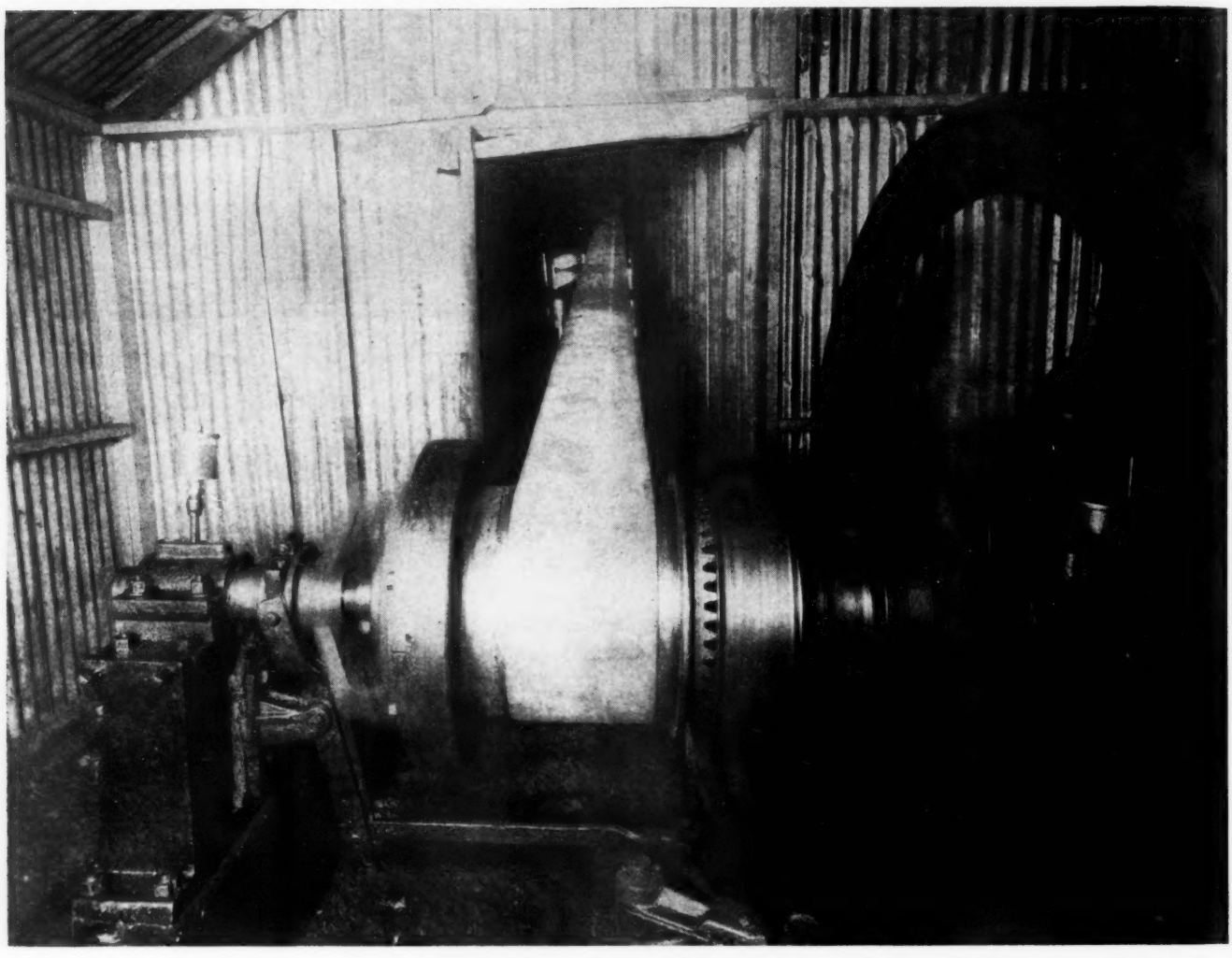
Superior Oil Corp. has leased the greater part of one floor in the Exchange National Bank building, Tulsa, and will soon leave the quarters in the Wright building it has occupied for several years.

* * *

Married: Miss Ruth Malsbury, of Joplin, and H. T. Galey, of Tulsa. "Ted" Galey is a member of the Gypsy Oil Co. land department.

* * *

Your correspondent made his biennial trip to New York last week to attend the conservation rodeo. His reluctance to make this kind of trip has been figured out by psycho-analysis. The New York office of NATIONAL PETROLEUM NEWS has no spitoons in it.



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GOODYEAR

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Kettleman Operators Forced to Drill To Meet Terms of Leasing Law

By Paul Wagner
N. P. N. STAFF WRITER

LOS ANGELES, May 3

UNDER existing conditions imposed by the federal land leasing act, Kettleman Hills operators say they will find it necessary to continue drilling for the purpose of conforming to positive requirements of the law.

They consider that no interpretation of regulations by the Interior department at Washington can go beyond the provisions of the law itself and create the moratorium on development proposed several weeks ago by Secretary Ray Lyman Wilbur.

Where permits are nearing the nine years maximum term to which they may be extended, discovery must be made within the prescribed time, operators believe, as no law allows further extension.

Congress could take appropriate action to give the Interior department the authority that oil lawyers do not concede the Secretary has now, the producers point out.

The future of Kettleman Hills is so fraught with hazards due to 7000-foot drilling and the enormous pressures encountered there that the production situation appears to be a problem that will have to be handled in its own good time.

In a letter addressed to R. A. Sperry, vice president of General Petroleum Corp. May 2, Dr. George Otis Smith outlined his conception of the Kettleman Hills situation and acting under authority of Secretary Wilbur named an advisory committee to deal with the possibility and practicability of bringing the Milham discovery well under control.

Dr. Smith said he was informed conditions are not bettering themselves at the well "if indeed they are not getting worse, so that prompt action may be doubly desirable to stop the present waste and to save the well if possible." Dr. Smith's letter said "present wastage into the air every 24 hours is known to be 75,000,000 cubic feet of unused gas and 20,000 gallons of unrecovered gasoline."

He referred to the foregoing as measure quantities, but said there is also involved an unmeasured future wastage of oil the recovery of which from this great depth will be proved if and when there is insufficient gas remaining in the structure.

Besides Mr. Sperry the advisory committee named by Dr. Smith includes William C. McDuffie of Pacific Western Oil Co., Roy E. Collom, of the Marland Oil Co. of California, William Reinhardt of the Shell Oil Co., Norman A. Rousselot of Milham Exploration Co., Robert C. Patterson of the U. S. Bureau of Mines, Land and Leasing Division, and Reed D. Bush, state oil and gas supervisor of California.

Only the Milham Corp.'s discovery well, in 2-22-17, is now producing in Kettleman Hills; although the General Petroleum Corp.'s Oschner, six and a half miles away in 26-22-18, made at the rate of 2000 barrels of 61 A.P.I. gravity oil daily before deepening operations were undertaken.

The Milham well, which has been producing similar gravity oil since last fall, yields about 4000 barrels daily; approximately 3200 barrels through the flow lines and about 800 barrels daily stripped off the gas produced with the oil.

Approximately 53,000,000 cubic feet of gas is being handled daily through a plant of The Texas Co. of California from the Milham well. When the capacity of that plant has been expanded it will be possible to handle more of the 85,000,000 cubic feet of gas the well is estimated to be capable of making daily.

THE Kettleman situation resolves itself into two or more phases. First, there is the economic picture of an industry faced with production that an already glutted market cannot absorb if operations are continued and production unrestrained. Balancing against this is the legal position that operators must protect their rights through strict compliance with the law; in order that no future administration ruling or a decision of the Supreme Court of the United States may be that the present administration acted without due authority in attempting to suspend time running against permits in consideration of proposed shutdowns.

Dr. Smith told Kettleman operators at Los Angeles, April 29, that he had every confidence that "a geologist can have in legal matters," that the Secretary of the Interior will be found to have every authority necessary to deal with the situation.

He attempted to set at rest the unease of operators who feared they might not be granted extensions of permits on which requirements had been fulfilled to keep them in good standing but which were in the position of not reaching discovery within the prescribed time.

Under various amendments to the leasing act of 1920 it is usual for extensions to be made where discovery has not been attained but all requirements have been met to keep a permit in good standing. The law and amendments allow a total of nine years before the stage is reached where there is no statute providing for further extensions.

DR. SMITH took the position that the Secretary not only had the authority to protect rights of permittees and operators contracting with them for development but that the department also could deal with "nine year permit" situations without endangering the rights of companies or individuals.

It is with regard to the last mentioned phase of the situation that oil lawyers are mainly in disagreement with the legal position credited to the Interior department. They feel the operators must rest on the terms of the law and not on the discretion of any individual.

Dr. Smith explained that most of the government permits cancelled in various parts of the country under the administration's recently announced land policy represented "merely the burial of long dead permits." He referred to extensions of permits in the past in cases where work had been done and saw "no reason to feel fear in the future if permits were in good standing" at the time of the recent change in administration policy.

As discussion proceeded among the operators, who took a solid front against suspending developments without definite assurance their rights could be protected, Dr. Smith referred to possibility of the government invoking section 16 of the leasing act. This provides against waste of gas, and so forth, to the destruction of oil deposits. There was the implied

threat that the government could act to cancel permits in Kettleman Hills, or elsewhere, if gas were being produced under conditions that kept it from carrying its full burden of oil to the surface.

After the close of the meeting with Dr. Smith a committee of seven Kettleman operators, began holding executive meetings to deal with the complicated situation of suggesting a plan of procedure and presenting it to another general meeting of permittees and operators.

The committee has been confronted with the conclusion that drilling is necessary to hold permits and immediate shut-downs of operations are virtually impossible. It would be desirable to reduce drilling to a minimum after protecting rights of permittees and operators but it may be necessary to drill one well to discovery on each permit before entering any thought of shut-down.

Viewed as an economic problem the Kettleman Hills structure presents an ideal example of a place to "stop before starting." Dr. Smith calls the structure the "world's greatest oil field of which we have knowledge," and many operators agree. The three related domes comprising the general structure are spread over a length of about 22 miles and a width of more than six miles.

Only the north dome, where the Milham and General wells were drilled, has been proved productive. In all there are about 40 wells drilling on the three domes, virtually all except those of the Standard Oil Co. of California, on government permits. The Standard owns each alternate section on the three domes in fee simple, having acquired the properties through its absorption of the Pacific Oil Co., about two years ago.

Drilling in the Kettleman Hills requires from eight to nine months, with good luck, to complete a well to the 7000 foot level at a minimum expenditure of $250,000 per well. It is reported the Milham discovery cost $300,000 to complete.

The time element involved, in the face of established productivity of the structure, has forced operators such as the Standard to offset locations of others as fast as made. If an offset well were to be started only after completion of a producer across the line from it then the last mentioned well owner would have at least a half year jump on production.

Standard has eight wells actually drilling in the Kettleman area and four other operations started; Pacific Western Oil Co. has three tests; Petroleum Securities Co. (Edward L. Doheny) has four in various stages from road building to drilling; Shell Oil Co. (California) has two; Ohio Oil Co. has one on the south dome; George F. Getty, Inc., is down below 5000 feet in a test; Associated Oil Co. is making two; Bolsa Chica Oil Corp. is drilling one; and the Milham Corp. is drilling three.

Only one of the Standard wells is on permit lands. All others are on fee acreage where it was necessary to "trail with offsets" against other operators. In the case of permit acreage the only well drilling and not required to go ahead seeking discovery under federal law is the No. 2 Elliott of the Milham Corp.

Both the Milham and Bolsa Chica companies look with disfavor on suspended operations because of their need for building up production for corporate purposes. Their position in such regard is easily understandable but the Kettleman situation is of such predominating weight otherwise that this would seem to smother individual necessities, in the opinion of industrial observers.

Meantime, all the industry can do about Kettleman Hills is to watch the continuance of development to protect rights in federal permits and see what comes of it. The fact that the Interior department seeks to lock up Kettleman Hills in the face of its attitude in New Mexico, where permits were cancelled because work was not continued, puts it in a position causing operators to try for a better understanding of policy involved.

Crude Output at New Peak in March

WASHINGTON, May 4.—A new peak in crude production for any one month was reached in March, a 31-day month, when output totaled 82,515,000 barrels, compared with output of 75,693,000 barrels in February, a 28-day month, according to the U. S. Bureau of Mines summary of oil industry operations for that month. March output was at the rate of 2,662,000 barrels daily average, which is considerably lower than the record figure of 2,703,000 barrels daily average in February.

Texas was the only state to increase its daily average production, this gain resulting mostly from increased output in the Salt Flat field. Daily average output in California decreased largely due to the decline in Santa Fe Springs.

Crude stocks east of California increased 2,700,000 barrels in March, standing at 379,659,000 barrels on March 31, compared with an increase of some 4,000,000 barrels in February. Stocks of crude in California rose nearly 3,500,000 barrels in March to 124,571,000 barrels, as against a rise of 3,200,000 barrels in February.

Daily average gasoline production declined slightly in March, but the total for the month gained 3,203,000 barrels to 34,467,000 barrels. This compares with a production of 31,264,000 barrels in February.

Gasoline stocks increased 1,501,000 barrels, standing at 47,205,000 barrels on March 31, which is considerably below the average increase for the past several months.

Kerosene production increased 80,000 barrels for the month, totaling 4,515,000 barrels, compared with February's output of 4,435,000 barrels.

Production of gas and fuel oil gained 3,125,000 barrels in March, to 37,456,000 barrels, this being at the rate of 1,208,258 barrels daily average, compared with daily average of 1,226,106 barrels in February. Stocks gained 1,297,000 barrels, standing at 130,699,000 barrels on March 31.

Production of lubricants totaled 2,943,000 barrels, which is an increase of 440,000 barrels. This is a daily average of 95,000 barrels in March, compared with daily average of 89,394 barrels in February.

Stocks of lubricants increased 319,000 barrels, standing at 8,853,000 barrels on March 31.

Wax production was 56,372,000 pounds, a gain of 6,345,000 pounds over February output. Stocks increased 18,351,000 pounds, to 158,404,000 pounds at the end of March.

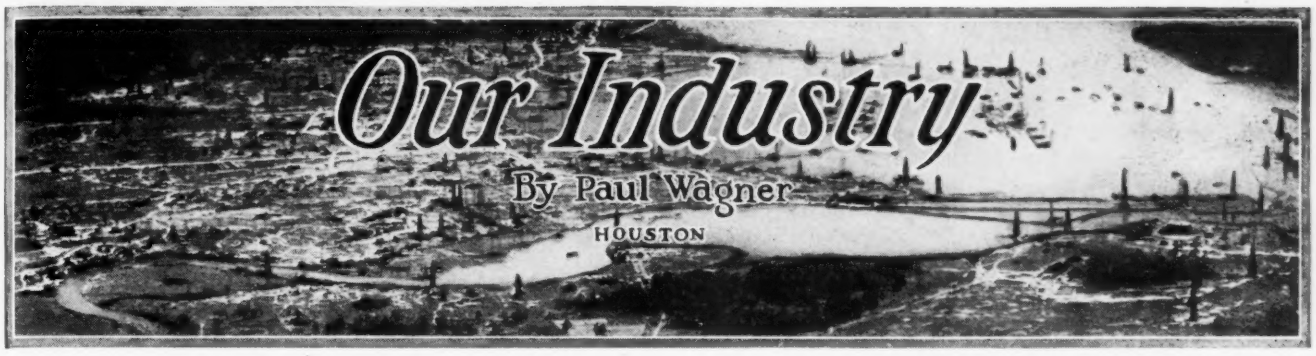
Coppage to Retire From Texas Co.

LOS ANGELES, May 3.—C. L. Coppage vice-president and director of sales for The Texas Co. of California has announced his retirement from the oil industry to become effective within thirty days. He will take an extended tour of Europe.

Mr. Coppage entered the oil business in 1909 as sales manager for the Associated Oil Co. of California. In 1919 he became vice-president and general manager of the Mohawk Oil Co. which until its merger with the California Petroleum Corp. in 1924 was outstanding in the Los Angeles Basin fields.

With this merger and the succeeding one in 1928 between the California Pet. Corp. and the Texas Company Mr. Coppage held the office of vice-president and director in charge of sales, and is known in oil circles as a first class producer and marketer.

No successor has been announced.



Wherever you find a pipeliner there also you will find a pipe smoker. Thus, I had no compunctions about reaching for my "hod," after settling myself in the offices of the Standard Oil Co. of California, visiting with A. E. Smothers, assistant to O. O. Allan, superintendent of pipelines in the Los Angeles Basin region. There

Reed D. Bush

was present also, at the time, E. L. Lucas, chief scout in Southern California.

"It's all right this time," Lucas remarked, "but it may be different the next time you're out. There's a bill in the California legislature to tax pipes as well as tobacco and cigarettes. You may have to get a permit and wear a license tag on 'the hod' if the bill goes through."

* * *

R. E. Connell, general sales manager of the Staytite Co., manufacturers of tank equipment, has returned to Houston headquarters after a business trip to California. He stopped off at San Antonio on his way back from the Pacific Coast.

* * *

R. M. Sands, long identified with oil affairs of the Pacific Coast, now occupies the dual position of president of the Petroleum Exploration Co., and assistant to President E. L. Doheny of the Petroleum Securities Co. The older Pan American Western Oil Co., formerly headed by Mr. Doheny, was sold to other interests several months ago.

* * *

M. A. Hardie, newly elected vice president of the Houston Gulf Gas Co., will have charge of all properties of the affiliated Dixie Gulf Gas Co., south of Waskom, in Texas. Major B. A. Hardy, vice president of the Dixie Gulf, goes back to Shreveport in charge of the greatly expanded Louisiana division.

* * *

Earl Miller, vice president of the Shell Oil Co. (California), has been transferred to the St. Louis offices of the Shell Petroleum Corp. Herbert R. Galleghar, who Mr. Miller succeeded, is returning to San Francisco after spending a year in charge of three Shell subsidiaries engaged in research work, namely, the Shell Development Co., the Shell Chemical Co., and the Simplex Refining Co.

* * *

Reed D. Bush, chief supervisor of the oil division of the California State Mining Bureau at San Francisco, has occupied that position since his appointment in 1923 to succeed Roy E. Collom, now executive vice president at Los Angeles of the Marland Oil Co. of California. Mr. Reed returned to California from the Mid-Continent to accept the position. He was for years identified with United States Bureau of Mines work and at other times engaged in research activities for the Henry L. Doherty interests.

* * *

After a preliminary organization meeting held late in April at Los Angeles, to deal with problems concerning the curtailment of Kettleman Hills development, the operators and lessees went into executive session to iron out the kinks. Only those directly interested, regardless of whether they were oil company executives or not, were allowed to stay. An oil writer present at the organization meeting got a laugh out of Tom O'Donnell, formerly president of the American Petroleum Institute, and L. P. St. Clair, vice president of the Union Oil Co. of California, when he said:

"The press has acquired a new dignity when you gentlemen get excluded along with the rest of us."

* * *

Earl W. Wagy of the Standard Oil Co. of California heads the statistical organization maintained at San Francisco headquarters. He carries the title of economist. Wagy is widely known throughout the petroleum industry, having occupied his present

Earl W. Wagy

position for years. An accompanying snapshot was taken at the time of his attendance on the Houston conference of the American Petroleum Institute general committee on stabilization.

* * *

E. W. Clark, executive vice president of the Union Oil Co. of California, and formerly president of the American Petroleum Institute, ex-

tended his recent eastern pleasure trip to include visits to Florida resorts.

* * *

The combination of the field and electric departments of the Midwest Refining Co., at Casper under George H. Jaques, has been followed by appointment of H. O. Bossart as his assistant. Mr. Bossart was formerly field superintendent of the Midwest at Salt Creek.

* * *

C. W. Alcorn, division superintendent of the Shell Petroleum Corp.'s operations in West Texas, will make headquarters hereafter at Midland. He was formerly located at central division general headquarters in Dallas with similar jurisdiction.

* * *

A new Pacific Coast oil company was being formed late in April to take over the California properties of the Miley Oil Co., and the personal holdings of E. J. Miley, its president. The deal was said not to affect the Miley Petroleum Exploration Co., or any other corporations except the Miley Oil Co. The name for the new company was not announced. Clifford De Lorme, who has just resigned from Bradford Kimball & Co., to become vice president and treasurer of the new company, will handle its financing.

* * *

F. W. Leite, president, has announced the removal of headquarters offices of the Westland Petroleum Corp., Bakerfield and Taft, in the San Joaquin Valley, to Los Angeles. Hereafter the company will be more active in Southern California.

* * *

R. A. Broomfield, president of the Barnsdall Oil Co. of California and head of the California Oil & Gas Association (formerly Chamber of Mines and Oil), spent the latter part of April in New York on business. He was also expected to visit in Tulsa with E. B. Reeser, president of the Barnsdall Corp., and president of the American Petroleum Institute.

* * *

F. C. van Deinse, oil umpire for California, who makes headquarters in the Security building at Los Angeles, returned to the petroleum industry without any strings tied to his discretion in handling the situation he found bearing down on him.

Although a trained oil man, formerly president of the Ventura Refining Co., and later vice president of the California Petroleum Corp., he had no embarrassing connections when he became umpire. He headed a chain of hotel properties in Los Angeles when drafted for the job. In addition to having no oil corporation connections he is said not even to own a share of any petroleum securities.

Theodore Earl Swigart, chief petroleum engineer of the Shell Oil Co. (California), is known to his friends simply as "Ted." He is a Californian by birth, but much of his oil industry experience has been in other parts of the United States.

After getting his A. B. degree at Leland Stanford University, Palo Alto, in 1916, he joined the field organization of the Shell, where he spent about two years. Previously, between school terms, he had worked for the Standard Oil Co. of California in the summers of 1913-1914 and had been in the refinery of the Shell at Martinez in 1915.

T. E. Swigart

He was an engineer with the United States Bureau of Mines at Bartlesville in 1919-1920 and assistant to the department chief at Washington from 1920-1922. In 1922-1923 he was superintendent of the Petroleum Experiment Station at Bartlesville, resigning to become consulting petroleum engineer to a group of London companies in Burma and India.

He returned to the Shell Oil Co. (California) in 1924. Among other activities he is responsible in large measure for successful working of the American Petroleum Institute Division of Production and Development Engineering, of which he is general vice-chairman.

* * *

Robert McKeon, who has been acting general manager of the Italo Petroleum Corp., Los Angeles, has been appointed permanently to be general manager. He succeeds A. G. Wilkes, who has been ill. Mr. Wilkes continues as vice president and director of the Italo. McKeon was elected secretary and E. P. Lyons treasurer, succeeding Paul Masoni, formerly secretary-treasurer and now resigned.

* * *

John McFadyen, general production head of the Ohio Oil Co., who makes headquarters at Casper, visited Texas and New Mexico on his return to headquarters in April from a California trip. While in Los Angeles he went over west coast operations with M. D Woolery, California manager, and Jack Dyer.

* * *

Paul M. Paine, ten years ago efficiency engineer in the Gypsy Oil Co.'s production department at Tulsa and later operating vice president of the Shell Oil Co. (California), continues to take life easy at his home in the Beverly Hills. Mr. Paine resigned from the Shell in 1924 to devote his time to personal interests.

He is one of the four owners of the Formax Oil Co., a close corporation operating in the San Joaquin Valley. As formerly, his office hours are from 11 to 12 a. m., on Tuesdays and Thursdays. Sometimes he fails to get down on Tuesdays.

* * *

Frank Champion, Jr., of Los Angeles, has become associated with Dewey Barber in a company known as Champion & Barber, Inc. It succeeds the organization formerly known as the New Method Pipe Slotting Co. The new company has plants at Long Beach and Taft, specializing in screen pipe and other equipment. Mr. Rice was for four years assistant superintendent of the Rice Ranch Oil Co., later was with the Pacific Wire Rope Co., and only recently resigned as Pacific Coast sales manager of the Lorraine Corp.

* * *

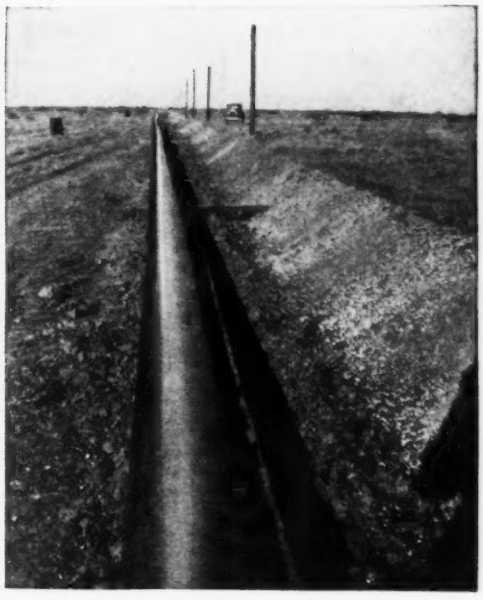
Leroy M. Edwards, Los Angeles attorney, is named as California representative of the Pure Oil Co. in papers filed at Sacramento preliminary to the Dawes organization entering California. No announcement has been made regarding whether the Pure plans leasing and development work or proposes to extend its marketing on the Pacific Coast.

* * *

Haymon Krupp, El Paso wholesaler, who heads the Texon-Group 1 oil companies as president, has been spending a vacation period in Bermuda.

Du Pont A.C.E.

permits rapid pipe-lining



Remarkable asphalt coating can be applied as fast as pipe is laid. Goes on without heat or cut backs . . . adheres to either wet or dry surfaces

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If you're interested in cutting pipe line protection costs, in beating penalty clauses, in insuring long-lasting anti-corrosive protection—full information on this improved asphalt product will be sent on request.

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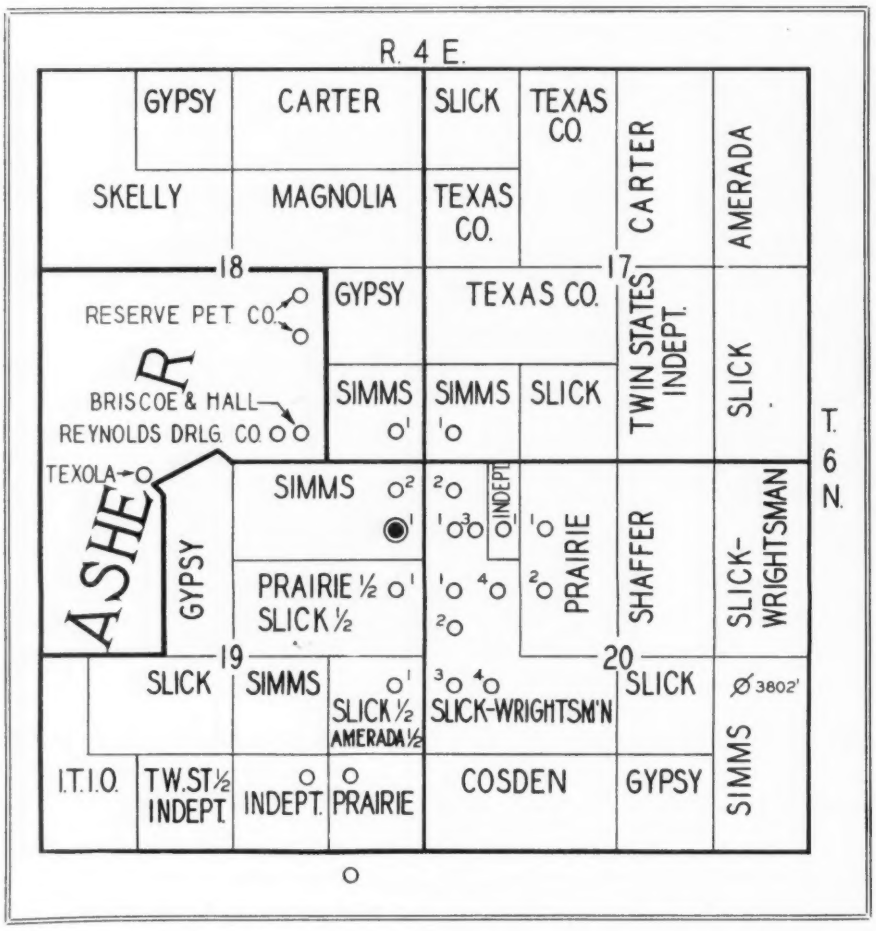
Petroleum Sales Department

Parlin, N. J.

Drilling Boom Is Under Way Near Simms Discovery



The area near Asher, Okla., where the activity is caused by the 3000-barrel Viola lime producer of the Simms Oil Co. A certain amount of townsite drilling is expected to result from the play now under way

TULSA, May 4

OKLAHOMA'S newest drilling boom gathered speed during the past week. In the vicinity of the Simms discovery near Asher in Pottawatomie county some 25 wells are getting under way at a rapid rate.

The Simms well is located in the SE NE NE of 19-6-4. It was completed about two weeks ago with an initial production of 3300 barrels from the Viola lime.

Current production of the well is about 3100 barrels per day, only 200 barrels below the peak. This is unusual for a Viola lime well.

Possibilities of the field yet are unknown. If it is to be a major field Wilcox production must be found, according to general opinion in the field. The drilling play is getting under way with no delays in spite of the uncertainty. Short term leases and the possibility that the east edge of the town of Asher may be in the money have contributed to the boom.

A Wilcox sand failure has been drilled a mile east and a quarter of a mile south of the Simms discovery. This is the only indication of the possibilities in the deeper pay.

One step toward bringing about a statewide proration in Oklahoma is to be taken May 15. At that time a petition is to be laid before the corporation commission asking that proration be extended to include all fields with a daily per well average in excess of 100 barrels.

A meeting of Oklahoma operators has been called for the purpose of discussing this plan before the commission sits. The operators meeting will take place May 9. By this plan it is hoped to hold the production of the state to 650,000 barrels per day.

In Kansas, where the production for the state is climbing rapidly, the newest discovery of really major size is the Shell Petroleum Corp. No. 1 Lygrisse, in 15-26S-2E. This well was opened up last week producing nearly 2000 barrels per day, swabbing and flowing.

The new well is some six miles east of the Wright or Valley Center pool, Sedgwick county's discovery field. It is not considered an extension of the Valley Center area, but is thought to be a new pool. Several locations have been made in the vicinity of the well.

Notes on the Week

The Prairie Oil & Gas Co., it is reported, is to lay a 6-inch pipe line from the Asher district, in 6N-4E, to connect with its diagonal east-west line running through 7-7-4.

Prairie Pipe Lines' crude oil deliveries for the month ending April 30, 1929, totaled 5,952,637.67 barrels, or a daily average of 198,421 barrels.

* * *

Potential production for the Seminole area, as determined by open flow gage for the 24 hours beginning 7 a.m. April 30, and ending 7 a.m. May 1, is 456,133 barrels. By pools the potentials are as follows:

Little River	92,550
Car City	16,105
Maud	17,439
Mission	39,894
Bowlegs	42,696
Earlsboro	74,881
Seminole	43,570
Searight	13,767
St. Louis	115,231

The allowed production of the entire area is 75 per cent of the lease by lease gage for the day on which the potentials were taken.

Straight Hole and Gas Lift on Program

NEW YORK—Oil field methods, particularly gas lift and straight-hole practices, will be the chief subjects to be discussed at the meeting of the American Petroleum Institute division of development and production engineering, Mid-Continent district, which will be held at the Mayo Hotel, Tulsa, May 28 and 29.

Speakers will be C. P. Dimit, Gypsy Oil Co., chairman of the production practice committee of this division, whose paper "Gas Lift Practice at Seminole" has been prepared from a series of questions submitted to men directly connected with gas lift operations in the Seminole field and their answers. The paper represents a summary of the experience and opinions of these men, with practical, rather than theoretical phases, given prior consideration.

"Straight Hole Practice," will be the subject discussed by Charles Jacobsen, Barnsdall Oil Co., Tulsa.

Brisk Drilling to Deep Sands In Santa Fe Springs

LOS ANGELES, May 3

SANTA FE SPRINGS continued to show a great deal of drilling activity, although the completions were fewer than in the previous week. Production of 209 wells from the upper sands gave 23,921 barrels, while 112 wells produced 139,313 barrels from the Buckbee and lower zones. Texas Company's Matern No. 3-13 came in for 6504 barrels from a depth of 6900 feet, and Universal Oil Company's O'Connell No. 4 contributed its share, with 4550 barrels from a depth of 6532 feet.

Richfield Oil Co.'s Elliott No. 2, after a number of unsuccessful attempts had been made to obtain a water shutoff in a soft formation, at 7000 feet, is now coring ahead, and the bottom of the hole is at 7533 feet. Streaked oil sands were found from 7512 feet to the present bottom.

General Petroleum Corporation is running 4¾-inch casing in its Santa Fe No. 228 to cement over the lower Clarke at 7485 feet, bottom of hole being at 7674 feet. Associated Oil Company's Dallugge No. 7 cemented 6⅝-inch casing over lower Clarke at 7785 feet.

Proration is definitely known to account for a reduction of 3200 barrels in the upper zones and 7000 barrels in the lower. Seven wells were killed in the Buckbee zone to deepen, with a resulting loss of 3100 barrels.

Difficulty in obtaining water shutoffs in the questionable Clarke sand has caused operators to direct their efforts to the O'Connell zone. Hot water troubles are encountered only when the O'Connell sands are drilled through, and the gray sand overlying the upper Clarke is tapped.

Rhode No. 3, the only Clarke producer, has had a very rapid decline, another reason for causing deep sand drillers to hesitate. Of the wells producing from part of the Clark zone along with the lower O'Connell, only one—The Texas Company's Baldwin No. 4—has a cut of less than ten per cent.

Deep sands at Long Beach showed an increase in production over that of last week, although the field total was down. Hancock Oil Co.'s Signal No. 17 was the only substantial addition during the past week. It flowed 3600 barrels from a depth of 7187 feet.

Many of the 895 wells producing in the field are owned by small operators, who look with disfavor on any attempt to cut off their meal ticket through proration. This opposition will tend to prevent a hundred per cent cooperation in curtailment plans for this field.

Marland Oil Co. of California chalked up two good producers in the Seal Beach field when it brought in its Bixby No. 23 for 2300 barrels from a depth of 5645 feet, and its Bixby No. 7 for 2200 barrels from 5715 feet. The former well was deepened from the Selover to the Wasem zone. Wasem zone producers are proving to be the money makers of this field.

Leaseholders in the northwest part of the Lawndale field had their hopes revived once again during the past week when several wells showed strong gas pressure that may indicate the existence of sands capable of yielding commercial production.

Ethyl Oil Company's O'Gorham No. 1, although producing approximately two million cubic feet of gas and 300 barrels of oil, is also cutting about 25 per cent salt water. Shell Oil Co.'s Barkdull No. 1 was doing in excess of 1,500,000 cubic feet of gas and 250 barrels of fluid. The well is now standing cemented at 5500 feet in an endeavor to stop a cut that amounted to over 90 per cent. Some operators in this field, failing to obtain oil wells, are preparing to attempt to make commercial gassers of the holes if a sufficient quantity of gas can be obtained.

Sovereign Oil Co. has evidently found something good in its No. 5 where it is standing cemented at 6870 feet. A report is current that this company is so sure that it is in the money that it is looking for more leases. It is said that on the basis of this activity the Standard Oil Company will deepen its Vance well, which is standing idle at 7200 feet.

Interest in the coastal country in the vicinity of Ventura and Elwood has picked up considerably with the possibility that several commercially productive fields will be found in this district in the near future. Santa Barbara Mesa looks good to many and the area around the Continental Oil Company's Franklin No. 1 is practically all leased. Rio Grande Oil Co. has secured leases on 3000 acres three miles south of the town of Surf in Santa Barbara County and has assigned 500 acres to the Keystone Petroleum Co. in return for the drilling of a test well. This wildcat will be watched with a great deal of interest.

Barnsdall-Rio Grande interests in the future will alternately drill in the Doty and Bell leases, under a recent revision of lease obligations. In this way only one string of tools need be run at one time.

A number of new completions are scheduled for Ventura Avenue within the coming week. Associated Oil Co. expects to make producers within the near future out of Nos. 9 and 17 on the Hartman lease and Nos. 59 and 73 on the Lloyd lease. Pacific Western and Shell Oil companies will also make several important tests very soon.

Completions in California, Week Ended April 27, 1929

Company	Well No.	Location	Depth	Init. Prod.
Long Beach				
Dabney-Johnson	30	....	4796	230
Hoyt, Otis	1	....	6775	2250
Jergins, Synd.	5	....	6766	600
So. Basin Oil Co.	5	....	7465	120
Santa Fe Springs				
Richfield Oil Co.	Howard 3	....	6500	2980
Universal Oil Co.	O'Connell 4	....	6535	4535
Seal Beach				
Marland Oil Co.	Bixby 7	....	5620	1500
Richfield				
Cont. Oil Co.	Santa Fe 1	....	4495	310
Rincon				
Chanslor-Canfield-Midway Oil Co.	Hobson B 7	....	4210	290
Fruitvale				
General Pet. Corp.	Hensley 3	22-29-27	4945	375

Seminole Production Summary

(By Telegraph)

	May 4 Wells	May 4 Barrels	April 27 Wells	April 27 Barrels
Little River	334	78,912	330	78,490
Bowlegs	306	34,979	307	35,127
Earlsboro	306	62,973	305	61,220
Seminole City	276	34,735	276	33,987
Searight	73	11,446	72	12,520
Carr City	33	14,395	32	13,843
Maud	112	13,512	109	14,509
Mission	103	35,354	85	31,921
St. Louis	349	102,354	346	97,098
TOTAL	1,892	388,660	1,862	378,715
Average per well May 4				205 barrels
Average per well April 27				203 barrels

Completions in Oklahoma and Kansas, Week Ended May 4, 1929

OKLAHOMA

Beckham County

Company	Well No.	Location	Depth	Init. Prod.
Day	1	C NW NW 33-8-21 W	T.D. 1515	Dry

Carter County

Sturn	2	SW NE SW 35-3-2 W	894-993	15

Creek County

Magnolia	15	NWc NE NW SE 8-18-7 E	2490-2525	25
Collins et al	1	NWc SE SW 12-17-11 E	1191-1205	10
Franchot-Mid Cont.	2	NW NE SW 16-16-10 E	2860-2874	510
Burnett	1	NEc SW SW 28-18-11 E	T.D. 2412	Dry
Fusselman et al	5	C NE SW 33-17-11 E	T.D. 1683	Dry
Texas	1	C W½ SE 11-15-10 E	T.D. 2800	Dry
Madden-Madden	1	SE NE SE 34-15-10 E	T.D. 3160	Dry
Havel et al	1	SWc NE NW 11-14-10 E	T.D. 3184	Dry

Hughes County

Magnolia	1	SEc NE 5-9-11 E	T.D. 3625	Dry
Ramsey	7	NE SE SE 18-5-8 E	2565-2630	325
Hays	2	CSL SE SE 13-9-9 E	2762-2768	23M

Kay County

Harris-Haun	1	SWc 9-27-1 W	3462-3471	OWD 15
Anolu	2	C NE NW 16-27-1 W	T.D. 3619	OWD Dry

Kiowa County

Engle et al	1	NWc SW 20-7-17 W	T.D. 1045	Dry
Cloys	1	SWc NE 34-7-17 W	T.D. 1425	Dry
Head et al	1	NEc SW NW 32-6-16 W	T.D. 460	Dry

Logan County

Blackwell	2	NE SE NW 28-18-4 W	4081-4091	90

Muskogee County

Johnson et al	1	NW NE NW 23-13-18 E	663-679	1M
Robinson Bros. Drlg.	1	SEc 18-13-16 E	997-1015	.5M
Colton-Lester	1	C NW SW 31-12-19 E	T.D. 1737	Dry
Smith	1	SWc SE SW 16-13-19 E	T.D. 788	Dry
Haynes et al	1	SWc NE 6-14-19 E	T.D. 885	Dry

Noble County

Alco	1	SEc NW 33-21-1 W	3385-3398	6M

Okfuskee County

Champlin	6	SW NE SE 15-11-11 E	3469-3498	400
Josey	3	SW NW NW 33-12-11 E	3656-3681	100
Prairie	6	NW SE NW 2-9-9 E	T.D. 3451	OWD Dry

Okmulgee County

Diamond	1	CEL NE NE 28-13-11 E	T.D. 2712	Dry
Selby	12	CNL NW NW 6-14-15 E	640-652	10

Oklahoma County

I. T. I. O.	1	SEc NE 24-11-3 W	3950-3953	37M
I. T. I. O.	1	C NW SE 24-11-3 W	4866-4877	70M
Franklin	1	CWL NW 12-11-3 W	3995-4017	57M

Osage County

Tidal	1	SWc NE 29-21-11 E	2005-2011	25
Stanley	7	SW NW SE 36-22-8 E	535-544	35
Red Bank	1	NW NE NW 29-23-8 E	2798-2807	OWD 15
Minnehoma	4	NEc SW 11-26-8 E	2184-2187	30
Tidal	1	SWc NE 25-24-8 E	T.D. 2305	Dry
Peters	9	NW SE NW 26-25-9 E	T.D. 2257	Dry

Payne County

Hughes	2	SWc NW 10-18-5 E	2909-2918	7.5M

Pontotoc County

Denver Prod. & Ref.	1	SE NE NE 36-5-4 E	2640-2650	90
Sinclair-Hull	1	SEc NW 6-4-6 E	T.D. 3977	Dry

Pottawatomie County

Atlantic-Darby	1	NE SE NE 13-9-4 E	T.D. 4252	Dry
Prairie	8	NW SE SW 18-8-5 E	4154-4160	90
Prairie-Slick	3	NW SW NE 18-7-5 E	4055-4075	15
Prairie-Slick	4	SWc NE 18-7-5 E	4070-4110	115
Prairie-Slick	1	NEc NW 18-7-5 E	4255-4260	500
Prairie-Slick	2	SE NE NW 18-7-5 E	4030-4050	160
Prairie	1	SWc SE 7-7-5 E	4042-4082	30
Amerada	2	SW NW NW 20-8-5 E	4142-4175	140
Gypsy	8	NEc SE 18-8-5 E	4045-4059	60
Gypsy	7	NW SE SE 18-8-5 E	4067-4080	135
Sinclair	3	SW SE SW 77-5E	3965-4078	315
Magnolia	1	SE SW NW 17-7-4 E	4365-4405	OWD 682
Magnolia	3	SEc 15-7-4 E	4392-4423	OWD 175
Panther	1	SWc 14-7-4 E	4280-4288	OWD 375

Seminole County

Amerada	1	NEc NW 24-9-5 E	T.D. 4263	Dry
Skelly	1	SW NW SW 36-10-5 E	T.D. 4319	Dry
Prairie	3	NWc NE 24-9-5 E	T.D. 3645	Dry
Prairie-Slick	1	NW SW SE 6-9-6 E	T.D. 4493	Dry
Prairie-Skelly	7	SW NE NW 6-9-6 E	T.D. 4415	Dry
Prairie-Slick	1	NWc 30-7-6 E	T.D. 4557	Dry
Prairie-Skelly	4	SW SE NW 6-9-6 E	4142-4153	715
Prairie-Slick	1	NWc 26-7-6 E	3185-3191	400
Prairie-Slick	1	NWc SE 20-8-5 E	4187-4200	100
Prairie-Slick	1	SEc NW 4-8-7 E	3280-3303	140
Carter	1	SEc NW 26-7-6 E	T.D. 3095	OWD 20M
Shell-Papoose	7	NE SW SW 7-8-6 E	4279-4293	340
Shell-Papoose	6	SW NW SW 7-8-6 E	4160-4168	295
Empire	5	SE SW NE 11-8-5 E	4141-4152	825
Cosden	1	NE NW SW 13-9-5 E	4221-4233	590
Sunray	3	NW SW NE 19-5-8 E	2560-2627	600
Mid-Continent	14	SW NW SE 7-5-8 E	4205-4216	220
Sinclair	1	NW SW SE 7-6-8 E	4097-4164	955
Indep.-Mid-Kans.	1	SW NW NE 26-7-6 E	3170-3172	44M
Carter	2	SW SE NW 26-7-6 E	3212-3250	35M

Sequoyah County

Buffington	1	C SW NW 31-12-24 E	T.D. 3003	Dry

Stephens County

Amerada et al	1	SW NE NE 19-2-4 W	T.D. 3503	Dry

Wagoner County

Cherokee Pub. Serv.	1	SWc NE SE 35-16-17 E	771-780	3M

KANSAS

Barber County

Barbara	1	NEc NW 12-33-13 W	4548-4556	22M

Butler County

Schreck-Lilly	1	SEc SW 8-25-7 E	T.D. 822	Dry

Cowley County

Johnson-Shell	1	NWc SW 19-33-6 E	T.D. 3555	Dry
Byle-Sutter et al	1	SWc NE 9-35-4 E	T.D. 3651	Dry
Dutton-Gillespie	1	SWc NE 21-30-4 E	T.D. 2903	Dry

Greenwood County

Rockhill-Taylor	1	NWc SW 2-25-10 E	T.D. 2155	Dry
Independent	11	SE NE NW 11-22-10 E	2142-2147	200
Mid-Continent	14	SEc NE 14-24-12 E	1708-1740	25

Rooks County

Krueger et al	2	SW SE SW 11-9-16 W	T.D. 3584	Dry

Russell County

Kayes	7	SW NE NE 32-13-15 W	T.D. 3360	Dry

Sedgewick County

Bu Vi Bar et al	1	NEc SW 19-25-1 E	T.D. 3500	Dry
Rogers	1	NWc NE SE 36-25-1 W	T.D. 3460	Dry
Robinson et al	1	SE SW NE 36-25-1 W	T.D. 3466	Dry
Bu Vi Bar et al	1	NWc NE 7-26-1 E	3367-3374	1150
Tidal	2	NWc SW NW 6-26-1 E	3383-3391	350
Sutter-Pyle	1	NW SE SW 6-26-1 E	3381-3384	815
Plains	1	NEc SE SE 36-25-1 W	3412-3414	75
Phillips	1	NW NE NE 1-26-1 W	3403-3405	170

Sumner County

Harris-Haun	1	C NE NW 23-34-2 E	T.D. 3826	Dr

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended May 4, 1929

OKLAHOMA

Carter County

Company	Well No. & Farm	Location
Woodruff	1-Zellner	NW SW NE 32-4-1 E

Cotton County

Moore	2-Moore	CWL NE NE SW 2-2-10 W

Creek County

Murphy	1-Lapham	SWc NE SW 35-19-8 E
Bartlett	4-Bartlett	SEc NE NW NE 18-19-9 E
Miller et al	1-Irelan	SEc NE 4-17-11 E
Collins et al	2-Halsell	NEc SW SW 12-17-11 E
Franchot-Mid-Cont.	4-Garrett	NEc SW 16-16-10 E
Elson-Shell	1-Harjo	NEc SW SW 27-14-10 E

Hughes County

Magnolia	6-Reed	SE SW NW 17-5-8 E
Magnolia	5-Reed	SW NW SW 17-5-8 E

Jefferson County

Pearce-Brown	1-School	SE NE NW 16-5-8 W
Beck	3-Seay	SWc SE SW SE 34-6-5 W

Kay County

DeCamp-Lancer	1-Eggers	C SW 26-28-1 W
Comar	3-Beverlin	NW SE NW 34-25-1 W OWD

Kingfisher County

Superior	1-Story	SEc 25-19-5 W

Kiowa County

Cummings et al	1-Prough	NEc SE SW 18-6-16 W

Marshall County

Jordan et al	1-Penn Mutual Life Insurance Co.	NW NE SE 17-5-5 E

Muskogee County

Price	4-Woodall	CSL SW SW 20-15-16 E

Okfuskee County

Moore et al	1-Autry	SWc SE NW 12-10-11 E
Barnsdall	1-McKinney	NWc SE 18-10-11 E

Oklahoma County

Texola	1-Spencer	NW SE NW 22-11-3 W

Okmulgee County

Dodge	1-Buffalo	NWc SE 32-15-12 E
Howard	1-Doyle	CEL W½ SE SW 17-13-14 E

Osage County

Peters et al	11	NW SE NW 17-27-6 E
I. T. I. O.	1	SWc NW 16-27-10 E
Peters-P&R	1	SEc SW 22-27-11 E
Peters	2	SEc NW 28-24-10
Maxwell	3	NWc NE SE SW 5-24-11 E
Pueblo	2	NEc SE SW 14-21-8 E

Pawnee County

Prairie	10-McNeal	SW NE NW 10-20-8 E
Adamson	2-Parker	SE SW SE 24-21-7 E OWD
Miller et al	1-Martin	SWc SE 26-20-9 E
Swift et al	2-Smeltzer	NW SE NW 35-20-9 E

Pontotoc County

Westheimer-Daube	1-Smith	SE NW NW 10-4-7 E

Pottawatomie County

Prairie	1-Lynn	SW NE NW 20-6-4 E
Prairie	2-Lynn	NW SE NW 20-6-4 E
Prairie-Slick	2-Laster	SEc NE 19-6-4 E
Magnolia	3-Green	SW NE NW 20-8-5 E
Magnolia	4-Robbins	SEc 15-7-4 E OWD
Independent	1-Harding	SEc NW 18-8-5 E OWD
Magnolia	1-Jones	SEc NE 18-7-4 E
Quinlin	1-Light	NEc SE 18-7-4 E
Magnolia	2-Latimer	SWc NW 17-7-4 E
Phillips	1-Martin	NE SE NE 2-7-4 E
Pure	1-Tolon	NW SW NW 1-7-4 E
Independent	1-Borrows	SW NW NW 1-7-4 E
Simms	1-Conn	NW NE NE 30-6-4 E
Slick et al	3-Bledsoe	NWc SW 20-6-4 E
Slick et al	2-Bledsoe	SWc NW 20-6-4 E
Slick et al	2-Weldon	NWc 20-6-4 E
Slick et al	1-Weldon	SW NW NW 20-5-4 E
Slick-Amerada	1-Deister	NEc SE 19-6-4 E

Seminole County

Prairie	12-Billington	NW SW NW 11-8-5 E
Prairie	2-Dixon	SW SE NE 4-8-7 E
Mid-Continent	5-Smith	NE SW NE 5-7-7 E
Empire	1-Cotcha	NE NW NE 27-7-6 E
Independent	4-Carpenter	SW NE NE 27-7-6 E
Empire	4-Cotcha	SE NW NE 27-7-6 E
Empire	3-Cotcha	NW SE NE 27-7-6 E
Superior	1	SEc NE 11-9-6 E
Sinclair	2-Davis	SW NW SE 7-6-8 E
Marland-Sinclair	2-Perry	NE NW SW 18-9-7 E
I. T. I. O	2-Fleet	SEc NW 19-5-8 E

(*Continued on Page 55*)

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended May 4, 1929

(Continued from Page 54)

Company	Well No. & Farm	Location	Survey
Stephens County			
Hedrick et al	1-Thompson	SEc NW 1-1-8 W	
American PL	5-Dexter	SEc NW 34-1-8 W	
Lone Eagle	9-Simpson	NWc SE 34-1-8 W	
Pace et al	2-Cooper	NE SE SW 16-2-7 W	
Wagoner County			
Horner et al	1-Barnett	NWc SE 34-18-17 E	
Finefield	1-Willis	NWc NE NE SW 34-18-17 E	
KANSAS			
Butler County			
Empire	8-Cranston	NW NE SE 22-27-5 E	
Empire	2-Sherrock	NW NE NE 22-27-5 E	
Cowley County			
Lewis Prod	1-Sitton	SE SW NE 30-31-6 E	
Greenwood County			
Mid-Cont	15-Wayham	NEc SE 14-24-12 E	
Paul-Parker	1-Wiley	SW SE NW 28-26-11 E	
Reed et al	1-Dales	SEc 2-22-10 E	
Harvey County			
McCulloch	1-Prouty	NWc SW 3-23-1 W	
Kingman County			
Gypsy	1-Kincaid	NEc NW 18-29-5 W	
Russell County			
Midwest Explor	4-Baxter	NE NW SW 32-13-15 W	
Sedgwick County			
Shawver et al	1-Scott	SE SW SW 10-28-1 E	
Bu Vi Bar et al	1-Carr	NEc SE 1-26-1 W	
Davis-Skelly et al	6-Wilson	SEc NE 1-26-1 W	
Coleman	1-Aley	NE SW NE 26-26-1 W	
Tidal	3-Scherger	SWc NW 6-26-1 E	
Derby	3-Gorman	NWc SW 6-26-1 E	
TEXAS			
NORTH CENTRAL AND EAST CENTRAL			
Anderson County			
Humble	2-Todd Est.		Clark
Brown County			
Vinn Mix	76-Hickman	Blk-783	Benson
Riordan et al	2-Riordan	Blk-353	Jennings
Humble	17-Armstrong	Sec-1 Blk-789	Delgado
Hutton	1-Cox	Blk-641	BBB&C
Lloyd	12-Stanley	Blk-139	Smith
Lloyd	20-Collier	Blk-139	Smith
Lloyd	19-Collier	Blk-139	Smith
Lloyd	18-Collier	Blk-139	Smith
Bowen	4-Carson	Sec-6	Perry
Green et al	1-Barnes	Sec-5 Blk-106	Johnson
Mattocks et al	1-Sanderson	Blk-121	James
Cherry-Anzac	1-Brooks	Blk-115	Holstein
Callahan County			
Mook Texas et al	1-Aiken		Mitchell
Moutray	6-Hatchett	Sec-23	D&DA
Humphries	4-Garey	Sec-40	D&DA
Warren-Hays	6-Moble	Sec-32	D&DA
Texas	1-Hatchett	Sec-24	D&DA
Dickey	1-Williams	Sec-25	D&DA
Cherokee County			
Humble	1-Holt		Oliphant
Coleman County			
Sun et al	1-Long	Blk-481	Johnson
Roth-Faurot	4-Stevens	Blk-57	Coleman Co. Sch. Ld.
Stepp-Keister	2-Shore	Sec-72 Blk-1	GH&H
Concho County			
Duffey et al	1-Gillian	Sec-21 Blk-10	H&TC
Eastland County			
Lone Star	1-Storm	Sec-470	SP
Parson	1-Stubblefield	Sec-21	McLennon Co. Sch. Ld.
Woveland et al	1-Stroebel	Sec-71 Blk-3	H&TC
Jack County			
Buttram	1-Boyd		Wright
Lielhart-Walton	1-Walker	Sec-2	SP
Jones County			
Treat	1-Hodges	Sec-6	Bell
McCulloch County			
Roth-Faurot	2-Smith	Blk-1293	Eckhardt
Navarro County			
Transcontinental	1-Derden Est.		Donnell
Shackelford County			
Tannehill et al	1-Elliott	Sec-9	LAL
Ohio Texas	14-Mathews	Sec-29	ET
Grisham-Hunter	2-Davis	Sec-20 Blk-13	P&T
Hughes et al	1-Smith	Sec-9 Blk-11	T&P
Humble	1-Newell	Sec-87	ET
Engle Bros	3-Mathews	Sec-32	ET
Ohio Texas	3-Mathews	Sec-29	ET
Combest	1-Reynolds L & C Co.	Sec-55	ET
Combest	2-Mathews	Sec-1	ET
Cranfill-Reynolds	1-Moberly	Sec-48 Blk-11	T&P
Combest	1-Anderson	Sec-65 Blk-11	T&P
Ohio Texas	1-Mathews	Sec-29	ET
Ohio Texas	2-Mathews	Sec-29	ET
NORTH TEXAS			
Archer County			
Hines	1-Wallace	League-3 Blk-3	DCSL
Hunter	1-Bishop	Blk-52	Meade
Hines et al	1-Slaughter	Blk-15	Meade
Hines et al	1-Hamilton	Blk-5	Crawford
Beavers et al	1-Hayter	Sec-2402	TE&L
Panhandle-Kruger	1-Turveville	Blk-170	Carson
Texas-United Prod.	2-Brown		Sellers
King-Looney et al.	1-Key	Blk-58	Harris
Brown	2-Brown	Sec-2	SP
Gwynn-Archer Drlg	1-Moore	Sec-20 Blk-15	ATNCL
Archer Drlg	2-Thompson	Sec-20 Blk-12	ATNCL
Empire	1-Sterrett	Sec-2	SP
May Camp Drlg.	1-Matlock	Blk-25	Toby
Hines	1-Wilson	Sec-121 Blk-31	ATNCL
Young et al	1-Fee		Hooper et al.
Hines	3-Wallace	League-3 Blk-2	DCSL
Bailey	1-Jackson	Blk-136	Aldridge
Pandem	3-Wallace	League-3 Blk-11	DCSL
Kemrow	4-Campbell	League-3 Blk-1	DCSL
Stump	1-Hefley	League-3 Blk-7	DCSL
Pandem	4-Wallace	League-3 Blk-11	DCSL
Madden	17-Richardson	Blk-1	SAR
Continental	2-Logan		Armes
Hunter	1-Kovar	Sec-2438	TE&L
Cooke County			
Lloyd	1-McGlothin		Martin
Kewanee	16-Hyman		ET
Pure	7-Emby		Moss
Kewanee	1-Dennis		Hernandez
Wichita County			
Newberry	1-Frankle et al.	Blk-327	Waggoner
Clark-Bridwell	1-Frankle et al	Blk-326	Waggoner
Bass-Dillard	1-Woodward	Blk-325	Waggoner
Comac Drlg. et al.	7-Bishop		Netherly
Riner-Bailey	2-Michie		Netherly
Riner-Bailey-Cotton	4-Michie		Netherly
Ryan	1-Hamilton		Beckham
Bullington et al	3-Jennings	Sec-12	H&TB
Bradstreet	1-Waggoner	Sec-13	H&TB
Panhandle	3-Burnett	Sec-6	Meade
King Loyalty	3-Boyd	Blk-12	Lewis
Wilbarger County			
Waggoner	K-7-Waggoner	Sec-31 Blk-4	H&TC
Burton	G-2-Waggoner	Sec-18 Blk-4	H&TC
Golding-Cockran	J-1-Waggoner	Sec-17 Blk-4	H&TC
Empire	B-9-Waggoner	Sec-32 Blk-4	H&TC
Young County			
Mid-Tex	1-Calvin		Rohus
Steed-Gans	15-Snider		Wilson
Rathke-Panhandle	15-Prideaux		Rohus
Wise-Jackson	7-Calvin		Rohus
Bratcher	3-Prideaux		Tynes
Wootten-Reed	1-Alexander		Tynes
Cont.-Underwood.	2-Campbell	Sec-1376	TE&L
Hawkins et al	1-Owens	Sec-1	BBB&C
Petroleum Prod	1-Whitt	Sec-160	TE&L
Cooper-Hamilton	1-Thomas	Sec-155	TE&L
Horal	1-Morrison	Sec-431	TE&L
Lloyd	2-Gregg		Addington
Cunningham-Ford.	1-Newman		Sallie
Casey	3-Boone		BBB&C
Riggs-Oliphant	2-Langston	Sec-1490	TE&L
Parks-Pennell	1-McDonald	Abst-68	CT
PANHANDLE			
Carson County			
Gulf Prod	1-Block	Sec-111 Blk-4	I&GN
Empire	5-Magnolia	Sec-91 Blk-4	I&GN
Empire	16-Burnett	Sec-104 Blk-5	I&GN
Champlin	4-McConnell	Sec-67 Blk-4	I&GN
Gray County			
Amagray	2-Chapman	Sec-9 Blk-26	H&GN
Texas	5-Saunders	Sec-3	H&GN
Texas	2-Bull	Sec-2 Blk-B-2	H&GN
Texas	2-Chapman	Sec-50 Blk-A-9	H&GN
Danciger	4-Morse	Sec-1 Blk-26	H&GN
Phillips	1-Cox et al.	Sec-48 Blk-B-2	H&GN
Empire	1-Brown	Sec-238 Blk-B-2	H&GN
Hartley County			
Dana	1-Phelps	Sec-81 Blk-44	H&TC
Moore County			
Dana	1-Anthony	Sec-260 Blk-44	H&TC
Wheeler County			
Texas	2-Gordon	Sec-91 Blk-17	H&GN
WEST TEXAS			
Brewster County			
Chapman et al	2-Skinner	Sec-100 Blk-2	GC&SF
Garza County			
Emerald	1-Boren	Sec-137 Blk-5	H&GN
Howard County			
California	6-Roberts	Sec-137 Blk-29	W&NW
Humble	1-Settles	Sec-132 Blk-29	W&NW
Magnolia	1-Hyman	Sec-88 Blk-29	W&NW
Sweeney et al	3-Chalk	Sec-124 Blk-29	W&NW
Loving County			
Lockhart	2-Hazel	Sec-84 Blk-33	H&TC
Pecos County			
Talbot et al	1-Unsicker	Sec-25 Blk-10	H&GN
Transcontinental	1-Univ.	Sec-9 Blk-17	Univ.
Ward County			
Gulf Prod	5-O'Brien	Sec-18 Bk-F	G&MMB&A
Gulf Prod	2-Hutchings Stock Ass'n.	Sec-7 Blk-0	G&MMB&A
Shipley et al	1-Monroe	Sec-3 Blk-1	W&NW
Winkler County			
Humble	1-Walton	Sec-48 Blk-26	PSL
Southern Crude	T88CX2-Hendricks	Sec-21 Blk-26	PSL
Southern Crude	T88R3-Hendricks	Sec-27 Blk-26	PSL
Gulf Prod	1-Daugherty	Sec-22 Blk-26	PSL
Humble	C-12-Hendricks	Sec-10 Blk-B-12	PSL

Completions in Texas, Week Ended May 4, 1929

NORTH CENTRAL AND EAST CENTRAL

Anderson County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Humble	1-Purvey	Clark		T.D. 3688	2M

Brown County

Warren et al	1-Duff	Honeycutt	Blk-623	1150-1164	50
Paramount	7-Mayes	Ross	Blk-609	531-552	1M
Humble	16-Armstrong	Delgado	Sec-1 Blk-789	1218-1220	50
Cross Cut	1-Newton	Mitchell	Blk-141	1151-1162	6
Christie	1-Wilkins	Delgado	Sec-18 Blk-789	1180-1203	.27M
Anderson	8-Leather-wood	Delgado	Sec-11 Blk-789	1164-1174	25
Sheldon et al	1-Eisland	ET	Sec-1	T.D. 928	Dry
Rosenbaum et al	1-Newton	Sweeny	Blk-134	T.D. 1202	Dry
McClung et al	2-Davis	Kerr Co. Sch. Ld.	Sec-43 Blk-276	T.D. 641	Dry
Green	2-Hill	Lovelace	Sec-8	T.D. 1270	Dry
DeMont	4-Newton	Jones	Blk-282	T.D. 315	Dry
Campbell et al	1-Sweet	HT&B	Sec-59	T.D. 1146	Dry

Callahan County

West	1-Higgins	D&DA	Sec-40	T.D. 470	Dry
Texas	3-Hatchett	D&DA	Sec-23	T.D. 420	Dry
Bearman	1-Finley	D&DA	Sec-13	T.D. 650	Dry
Richards	1-Hickman	I&GN	Sec-2	T.D. 586	Dry
Reiter-Foster	1-Finley	BOA	Sec-74	T.D. 1050	Dry
Mortimer	2-Hickman	I&GN	Sec-2	T.D. 505	Dry
Humble	2-Head	SP	Sec-29	T.D. 1785	Dry
Gibson-Johnson	2-Snyder	BBB&C	Sec-139	T.D. 954	Dry
Breeman	1-Hobb	Larkin		T.D. 1227	Dry
Moutray	5-Hatchett	D&DA	Sec-23	404-408	10
Warren-Hays	5-Able	D&DA	Sec-23	418-423	10
Texas	2-Hatchett	D&DA	Sec-23	380-393	30
Moutray	4-Hatchett	D&DA	Sec-23	396-405	40
Humphries	3-Gray	D&DA	Sec-40	412-419	7
Beams	1-Snyder	BBB&C	Sec-140	1019-1040	5

Coleman County

Rex Tex Py Tex	1-Baker	Fisk	Blk-630	1372-1374	10
Tower-McKenna	1-Holmes	Quigley	Blk-739	T.D. 2505	Dry
Calloway et al	1-Thate	Comal Co. Sch. Ld.	Sec-26	T.D. 489	Dry

Concho County

Duffey-Silk	1-Lovelace	H&TC	Sec-66 Blk-70	T.D. 1824	Dry

Eastland County

Free	1-Lauderdale	Smith		T.D. 750	Dry
McClaren	1-Chappel	Winfree		T.D. 685	Dry

Erath County

Nelson	3-Finch	Dickerson		T.D. 3877	Dry
Associated	1-Carey	Spinasa		3280-3282	7M

Jack County

Murback et al	1-Warren	TE&L	Sec-2784	T.D. 602	Dry

Jones County

Grisham-Hunter	1-Tyner	Zumalt	Sec-279	2519-2541	10
McMann	2-Bickley	T&P	Sec-50 Blk-18	2455-2465	35

Runnels County

Miles	1-Lawhorn	McDonalds-Dist-11	Sec-68	T.D. 2449	Dry

Shackelford County

Sommers et al	1-Williams	TE&L	Sec-565	T.D. 601	Dry
Humphrey Bros	1-Flippen	T&P	Sec-41 Blk-11	T.D. 1050	Dry
Petroleum Prod	3-Davis	T&P	Sec-19 Blk-3	1645-1649	37
Ohio Texas	2-Mathews	ET	Sec-29	1085-1102	105
Pet. Prod	2-Davis	T&P	Sec-20 Blk-13	1643-1645	22
Grisham-Hunter	1-Davis	T&P	Sec-20 Blk-13	1638-1643	17
Midland	1-Davis	T&P	Sec-20 Blk-13	1638-1640	8
Ohio-Texas	1-Mathews	ET	Sec-29	1090-1110	380

Stephens County

Texas Fidelity	1-Bagsley	T&P	Sec-68 Blk-6	T.D. 2050	Dry

NORTH TEXAS

Archer County

Boller et al	2	Falls Co. Sch. Ld.	Blk-62	1171-1179	3
Atlantic-Johnson	1-Prideaux	TE&L	Sec-1860	732-738	3
Pet. Prod.-Humble	1-	Falls Co. Sch. Ld.	Blk-46	1174-1180	3
Wolfe-Son	1-Campbell	DCSL	League-4 Blk-26	T.D. 800	Dry
United Prod	1-Turbeville	Frazier		T.D. 1603	Dry
Reno	9-Wilmot	SP		T.D. 2290	Dry
Panhandle	1-Turbeville	Carson	Blk-170	T.D. 1516	Dry
Kemrow	3-Campbell	DCSL	League-3 Blk-1	T.D. 807	Dry
Gilliland et al	1-Roach	TE&L	Sec-1595	T.D. 1302	Dry
Burns	1-DeMoss	Smith		T.D. 1505	Dry

Clay County

Phillips	1-Myers	Shenett		T.D. 810	Dry

Cooke County

Kewanee	3-Hyman	ET		1571-1586	15
Kewanee	14-Hyman	ET		1105-1202	190

Montague County

Barbee et al	1-Hutchinson	TE&L	Sec-2829	T.D. 1503	Dry

Wichita County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod
Hammon	1-Wigley	Castleman	Sec-24	T.D. 1825	Dry
Riner-Bailey	1-Michie	Netherly		1776-1790	410

Wilbarger County

Lewis Prod	9-Waggoner	H&TC	Sec-18 Blk-4	2414-2431	135
Kolp	G-3-Waggoner	H&TC	Sec-18 Blk-4	2439-2445	73
Fain-McGaha	L-9-Waggoner	H&TC	Sec-31 Blk-4	2328-2422	127
Easter	A-3-Waggoner	H&TC	Sec-26 Blk-4	2395-2401	178
Wilbarger	B-1-Waggoner	H&TC	Sec-55 Blk-4	1875-1980	12
Waggoner	L-2-Waggoner	H&TC	Sec-32 Blk-4	2386-2405	212
Waggoner	K-6-Waggoner	H&TC	Sec-31 Blk-4	2321-2489	60
Waggoner	1-Waggoner	H&TC	Sec-18 Blk-4	2389-2400	96
Texas	E-17-Waggoner	H&TC	Sec-25 Blk-4	2400-2422	150
Texas	D-3-Waggoner	MEP&P	Sec-43	2391-2392	63
Staley-Wynne	G-2-Waggoner	H&TC	Sec-32 Blk-4	1830-1856	250
Melat et al	B-1-Waggoner	H&TC	Sec-10 Blk-4	1980-1992	75
King Royalty	1-Waggoner	SP	Sec-3	T.D. 1971	Dry
Wilbarger	C-1-Waggoner	H&TC	Sec-2 Blk-17	T.D. 2462	Dry

Young County

Lloyd	1-Gregg	Addington	Blk-1	T.D. 525	Dry
Cont.-Underwood	1-Campbell	TE&L	Sec-1376	T.D. 837	Dry
Casey	2-Boone	BBB&C		T.D. 601	Dry
Steed-Gans	14-Snider	Wilson		T.D. 610	Dry
May Camp Drlg.	2-Prideaux	YCSL	Blk-15	T.D. 625	Dry
Bundy et al	1-Brown	TE&L	Sec-1368	T.D. 1055	Dry
Walton et al	3-Prideaux	Tynes		453-487	7
Robertson Drlg.	3-Gilmore	YCSL	Blk-14	579-651	5
Robertson Drlg.	1-Gilmore	YCSL	Blk-14	588-657	5
Pennell	5-Calvin	Rohus		525-531	15
May Camp Drlg.	1-Prideaux	YCSL	Blk-15	563-572	9
Cont. et al	6-Campbell	TE&L	Sec-1390	906-918	98
Butler et al	1-Thomas	TE&L	Sec-155	999-1002	70
Bratcher	6-Edwards	Tynes		441-488	12

PANHANDLE

Gray County

Nelson-Holding	1-Dial	H&GN	Sec-32 Blk-25	T.D. 3165	Dry
Texas	1-Key	B&B	Sec-1	2746-2750	455
Shell	2-McConnell	I&GN	Sec-174 Blk-3	2970-3285	11M
Schwald et al	1-Sullivan	ACH&B	Sec-1 Blk-1	2550-2690	800
Wilcox	31-Reynolds	I&GN	Sec-61 Blk-3	3074-3160	100

Hutchinson County

Phillips	1-Bret	TC	Sec-23 Blk-M-23	3112-3125	1½M
Dunnigan Bros	1-Luginbyhl	TWGN	Sec-4	3145-3172	20

Moore County

Phillips	4-Sneed	Robinson		3153-3155	180
McMann	2-Sneed	Robinson		3160-3163	130

Wheeler County

Wishkamper et al.	1-Johnson	H&GN	Sec-50 Blk-17	1790-1806	25M
Johnston et al	1-Purcell	H&GN	Sec-50 Blk-17	1880-1945	6M
Fain-McGaha-Humble	1-Noel	H&GN	Sec-54 Blk-24	T.D. 2876	Dry

WEST TEXAS

Howard County

Moody	1-Roberts	W&NW	Sec-137 Blk-29	2545-2620	200
Amerada	7-Roberts	W&NW	Sec-137 Blk-29	2926-2941	350
Amerada	8-Roberts	W&NW	Sec-128 Blk-29	1302-1320	144
Comet Pet	3-Clay	W&NW	Sec-154 Blk-29	1822-1825	60
Cosden	3-Roberts	W&NW	Sec-128 Blk-29	1338-1339	360
Group-1&Marland	1-Overton	T&P	Sec-5 Blk-32	2319-2337	120
					(12 Hrs.)
Group-1&Marland	7-Settles	W&NW	Sec-133 Blk-29	2184-2240	830
Group-1&Marland	4-Settles	W&NW	Sec-158 Blk-29	2934-2936	565
Marland	3-Clay	W&NW	Sec-155 Blk-29	1828-1830	60
Merrick-Briston	8-Roberts	W&NW	Sec-137 Blk-29	2954-2973	1476
Moody	10-Roberts	W&NW	Sec-136 Blk-29	2329-2648	225
Witherspoon et al.	2-Abrams	T&P	Sec-3 Blk-32	2220-2318	830

Menard County

Panhandle	1-Eckhardt	TW&NG	Sec-10 Blk-2	T.D. 3070	Dry
Sabien-Bivens	1-Davis	Brecker	Sec-79	T.D. 1004	Dry
Crombwell et al.	1-Willhelm	Brooks	Sec-6	T.D. 3170	Dry

Motley County

Exploration	1-Fillatson	BS&F	Sec-35 Blk-T	T.D. 4003	Dry

Sutton County

Phillips	1-Cusenbig	CCSD	Sec-39	T.D. 1040	Dry
Montz et al	1-Allison	HE&WT	Sec-29 Blk-B	T.D. 150	Dry
Phillips	1-Cawthorn	GCSG	Sec-17	T.D. 975	Dry

Ward County

Atlantic-Delmar	1-Hazlett	H&TC	Sec-17 Blk-5	2473-2504	515

Winkler County

Southern Crude	T90 No. 3 Hutchins	PSL	Sec-47 Blk-26	2990-3160	28
					(12 Hrs.)
Simms-Cranfill	1-Sealy	GMMB&A	Sec-50 Blk-F	T.D. 3012	30
Gulf Prod	4-Cowden	PSL	Sec-3 Blk-B-12	2752-2969	400
Humble	C-10-Hendricks	PSL	Sec-10 Blk-B-12	2852-2900	39,300
Southern Crude	T89F2-Hendricks	PSL	Sec-40 Blk-B-5	2536-2972	70
Southern Crude	T89H2-Hendricks	PSL	Sec-46 Blk-26	2810-2998	75
Southern Crude	T8904-Hendricks	PSL	Sec-9 Blk-B-12	2844-2968	250

Completions in North Louisiana and Arkansas, Week Ended May 3, 1929

LOUISIANA

Bossier Parish — Princeton District

Company	Well	Location	Depth	Yield
Geo. W. Weatherbee	Fee No. 2	21-19-11	410	Dry and abd.

Union Parish

Nat. Gas & Prod. Co.	F. M. and J. G. Nolan No. 1	11-20-3E	2177	4M gas

Ouachita Parish — Monroe District

Moody & Seagraves	Phillips No. 2	16-19-4E	2183	2M gas

Richland Parish — Boughton District

Magnolia Pet. Co.	Sartor No. 1	5-15-6E	2400	463¾M gas

TEXAS

Harrison County

Company	Well	Location	Depth	Yield
Nick Barbare	Bahan-Furrh No. A-1	James Short A-1 HRS	2354	1½M gas
Fuller-Furrh No. 1	James Short HRS		2354	1½M gas

ARKANSAS

Union County — (Rainbow District)

Oil Well Corp	Perdue D-1	9-17-14	2808	5M gas 75 bbls. oil

A Formula Method For Well Spacing And Rate of Production

By Dr. W. P. Haseman*

Dr. W. P. Haseman

CRUDE oil is produced by the traditional method known as the "Well Method." This method comprises the proper spacing, timing and operating of wells. It has been used for the past 50 or more years by the industry with but little, if any, scientific advancement.

It is, therefore, an old method that should be discarded or developed to meet the existing needs of the ever progressing industry. The well method is fundamentally sound and, if scientifically developed and applied, will yield profits and progress to the industry.

There is a demand for increased efficiency and economy in the production of oil. In planning to meet this demand *science* is securing knowledge on the relation of the *spacing of wells* to the *ultimate yield* and on the relation of the *mode of operating wells* to the *ultimate yield.*

These relations are known to be complex, but simple relations have been determined which will serve as scientific and economic guides to the proper application of the well method of producing oil. This paper will present and discuss the determination of a scientific relation of the spacing of wells to the ultimate oil yield.

The ultimate oil yield of a property depends upon a number of factors, among which are:

GROUP I—Well Factors

(1) Spacing of wells
(2) Timing of completion of offset or near offset wells as producers
(3) Depth to top of pay sand
(4) Depth of penetration of pay sand
(5) Mode of operating wells

GROUP II—Sand Factors

(1) Thickness of pay sand
(2) Porosity of pay sand
(3) Saturation of pay sand
(4) Sand texture
(5) Sand permeability
(6) Sand cementation, lensing, etc.

GROUP III—Fluid Factors

(1) Fluid pressure
(2) Flow pressure gradient
(3) Gas-oil ratio
(4) Gas-oil mixture and distribution
(5) Specific gravity of fluids
(6) Viscosity of fluids
(7) Film phenomena

It is granted that the ultimate oil yield relation, in view of the free operation of these factors, is complex. The well method of producing oil, however, sets up and defines producing units, each of which contains one well, the sand within the drainage distance of the well and the fluids confined within the well and within the volume of sand drained. Each unit contains energy as manifested by the natural pressure of the fluids. The ultimate oil yield from these producing units can be studied under varying conditions.

The conditions under which the producing units will be set up and operated on a given property will

THAT it is possible, by mathematical methods, to determine the proper spacing for wells in a field and the method of operating them to effect their greatest ultimate yield is the conclusion of Dr. William P. Haseman, prominent petroleum engineer.

He expresses in this paper some of his conclusions along this line reached after years of study.

Dr. Haseman organized the research department of the Marland Oil Co. in 1924 and remained at its head until 1928, when he resigned to enter consulting work in Oklahoma City.

His first active connection with the oil industry was in 1919 when he became an independent wildcat operator to inform himself on oil industry practices. He had previously been for 10 years at the University of Oklahoma as head of the department of physics. Prior to that he taught in Indiana University.

From 1921 to 1923 he directed the first field work in geophysics with the seismograph. In 1923 he joined the Marland Oil Co. in research work.—Editor.

*Consulting engineer, Oklahoma City.

Chart 1

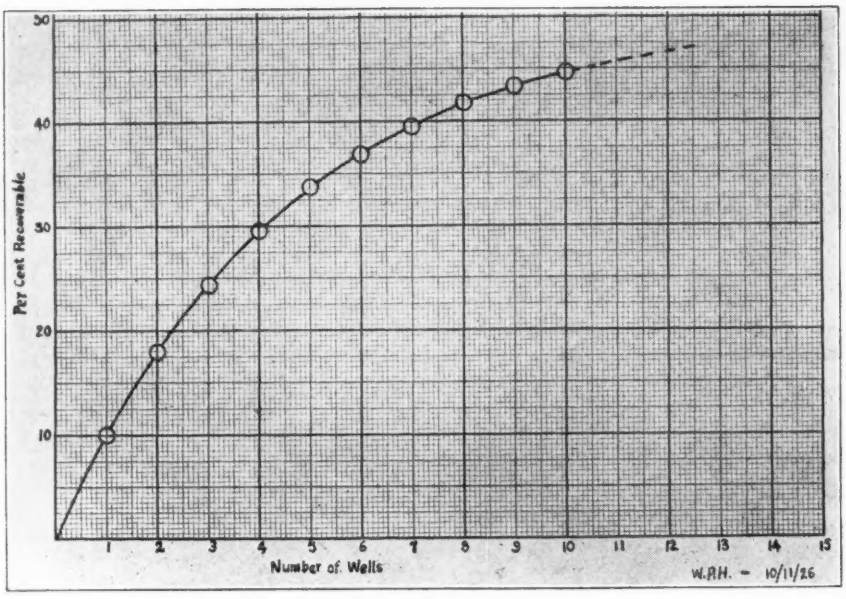
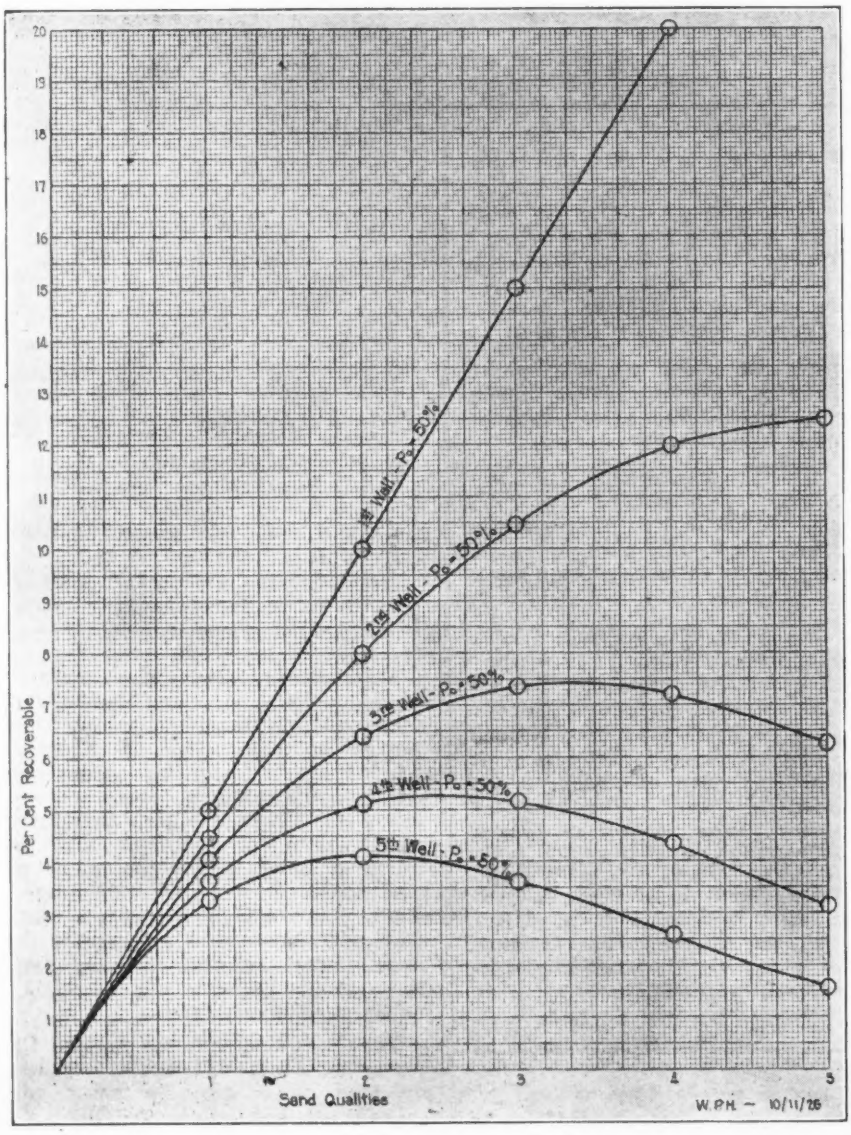


Chart 2



now be defined. The wells are assumed to be uniformly spaced, simultaneously put on production and similarly operated. The sand is assumed to possess a *producing quality* x when one well to each tract of y acres will give an ultimate oil yield of z per cent of the total oil confined in the sand reservoir. It is further assumed that:

(1) Zero wells drilled to each ten-acre tract of a given property will yield zero per cent of the total oil from the reservoir.

(2) One well drilled to each ten-acre tract of a given property will yield 5, 10, 15, 20, or 25 per cent of the total oil from the reservoir.

(3) Infinite number of wells drilled to each ten-acre tract of a given property will yield, say 50 per cent of the total oil from the reservoir.

The general equation which has the proper form and satisfies the boundary and limiting conditions set forth in the above assumptions is:

$$Pn = Po\ (1 - e^{-\lambda n})$$

Where

Pn = per cent of total oil in a given reservoir yielded from n wells to each ten-acre tract

Po = per cent of total oil in a given reservoir yielded from an infinite number of wells to each ten-acre tract

λ = spacing constant

e = base of the Napierian system of logarithms and equivalent to—2.71828—

This equation is general and applicable equally well to sands of various producing qualities. It expresses a simple relation between ultimate oil yield and spacing of wells. It may be used for properties where one well is drilled to each ten-acre tract and yields 5, 10, 15, 20, and 25 per cent of the total oil from the reservoir. It is also applicable to cases where an infinite number of wells are drilled to each ten-acre tract and yield 10, 20, 30, 40, 50, * * * and 100 per cent of the total oil from the reservoir. How well it fits the spacing problem is seen in Table 2 where actual field data are tabulated with computed data.

The formula when applied to a given property under the assumptions gives computed data as tabulated in Table 1. These data show, for example, that, if one well were drilled to each ten-acre tract and the ultimate oil yield by a given mode of operating the wells were ten per cent of the total oil from the reservoir, then two wells drilled simultaneously on this same tract will yield 17.991 per cent, or an added ($\triangle$P) of 7.991 per cent for the second well.

The data given in Table 1 are shown graphically on Charts 1 and 2. Chart 1 represents the total percentage of oil yielded by drilling one, two, three, four, five, six, seven,

Table 1—Computed Data from Applying the Haseman Formula to a Given Property

No. of Wells Per 10 Acres	P_n	ΔP	P_n	ΔP	P_n	ΔP	P_n	ΔP	P_n	ΔP
1.....	5.000	5.000	10.000	10.000	15.000	15.000	20.000	20.000	25.000	25.000
2.....	9.471	4.471	17.991	7.991	25.467	10.467	31.970	11.970	37.496	12.496
3.....	13.511	4.040	24.389	6.398	32.815	7.348	39.173	7.203	43.747	6.251
4.....	17.148	3.637	29.508	5.119	37.963	5.148	43.499	4.326	46.873	3.126
5.....	20.422	3.274	33.604	4.096	41.568	3.605	46.096	2.597	48.436	1.563
6.....	23.370	2.948	36.881	3.277	44.094	2.526	47.656	1.550	49.218	.782
7.....	26.025	2.655	39.504	2.623	45.863	1.769	48.592	.936	49.609	.391
8.....	28.414	2.389	41.602	2.098	47.102	1.239	49.155	.563	49.805	.196
9.....	30.566	2.152	43.280	1.678	47.974	.872	49.492	.337	49.902	.097
10.....	32.503	1.937	44.624	1.344	48.578	.604	49.695	.203	49.951	.049

eight, nine and ten wells to each ten-acre tract of a given property with a sand of ten per cent quality. Chart 2 shows the added percentage of the total oil in a reservoir yielded from sands of varying qualities by additional wells.

The line for the first well defines the sand qualities for oil yields. The curves show that from the standpoint of ultimate yield alone the better the sand the more advantageous to drill additional wells to a ten-acre tract. However, from the standpoint of the economic yield of oil, the volume of oil contained in the reservoir as well as the quality of the sand must be considered.

Table 2 compares actual field data with this computation. It reveals that in the Bartlesville-Dewey District in Oklahoma if one well be drilled to each ten-acre tract yielding ten per cent of the total oil from the reservoir, then

(1) 0.66 well to each ten-acre tract actually yields 6.95 per cent as compared with 6.88 per cent computed yield.

(2) 1.42 wells to each ten-acre tract actually yield 14.08 per cent as compared with 13.62 per cent computed yield.

(3) 2.00 wells to each ten-acre tract actually yield 15.92 per cent as compared with 17.99 per cent computed yield.

(4) 3.33 wells to each ten-acre tract actually yield 22.90 per cent as compared with 26.21 per cent computed yield.

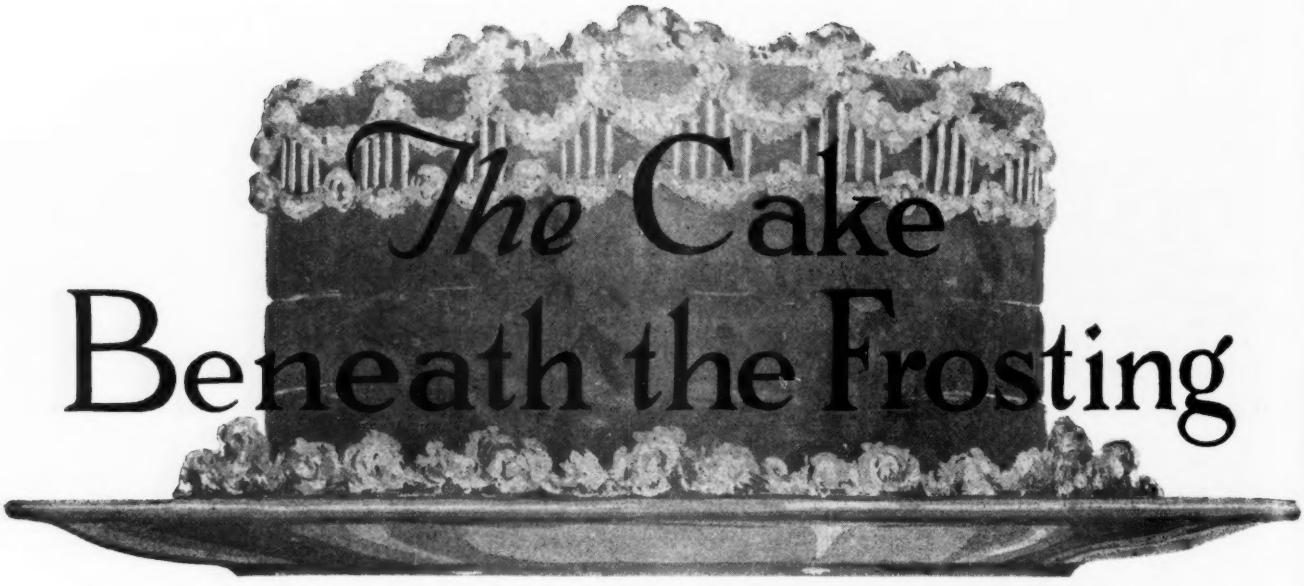
The increase of computed yield noted over the increase of actual yield as the spacing was closer is probably due largely to the fact that the wells were not completed simultaneously and operated uniformly.

This new relation between the ultimate oil yield and the spacing of wells is developed under more or less ideal conditions of the application of the well method of producing oil. It is a new scientific tool ready for application and development. Its general

Table 2*—Actual Field Data Compared with Computed Data from the Haseman Formula

No. of Wells Per 10 Acres	Initial Year's Yield in Bbls.	Ultimate Yield Per Acre—Bbls.	Per Cent Yielded Actual	Per Cent Yielded Computation
NOWATA DISTRICT—OKLAHOMA				
1.000.....	6,000	1,690	10.000	10.000
1.250.....	6,000	1,900	11.242	12.135
1.587.....	6,000	2,386	14.112	14.906
1.000.....	4,000	1,220	10.000	10.000
1.250.....	4,000	1,366	11.196	12.135
1.587.....	4,000	1,717	14.072	14.906
1.000.....	2,000	690	10.000	10.000
1.250.....	2,000	766	11.101	12.135
1.587.....	2,000	950	13.043	14.906
BARTLESVILLE—DEWEY DISTRICT—OKLA.				
0.666.....	4,000	987	6.950	6.878
1.000.....	4,000	1,420	10.000	10.000
1.428.....	4,000	2,000	14.081	13.619
2.000.....	4,000	2,260	15.915	17.990
3.333.....	4,000	3,250	22.901	26.215
0.666.....	2,000	513	6.792	6.878
1.000.....	2,000	770	10.000	10.000
1.428.....	2,000	1,100	14.285	13.619
2.000.....	2,000	1,220	15.844	17.990
3.333.....	2,000	1,727	22.298	26.215
0.666.....	1,000	257	6.675	6.878
1.000.....	1,000	385	10.000	10.000
1.428.....	1,000	550	14.286	13.619
2.000.....	1,000	632	16.415	17.990
3.333.....	1,000	876	22.753	26.215

*Actual field data tabulated from Petroleum Production Engineering, Page 403, by L. C. Uren.



The Cake Beneath the Frosting

ANY OLD CAKE can be camouflaged by a tempting icing—but it's not the looks that makes the cake, *it's what's beneath the icing*.

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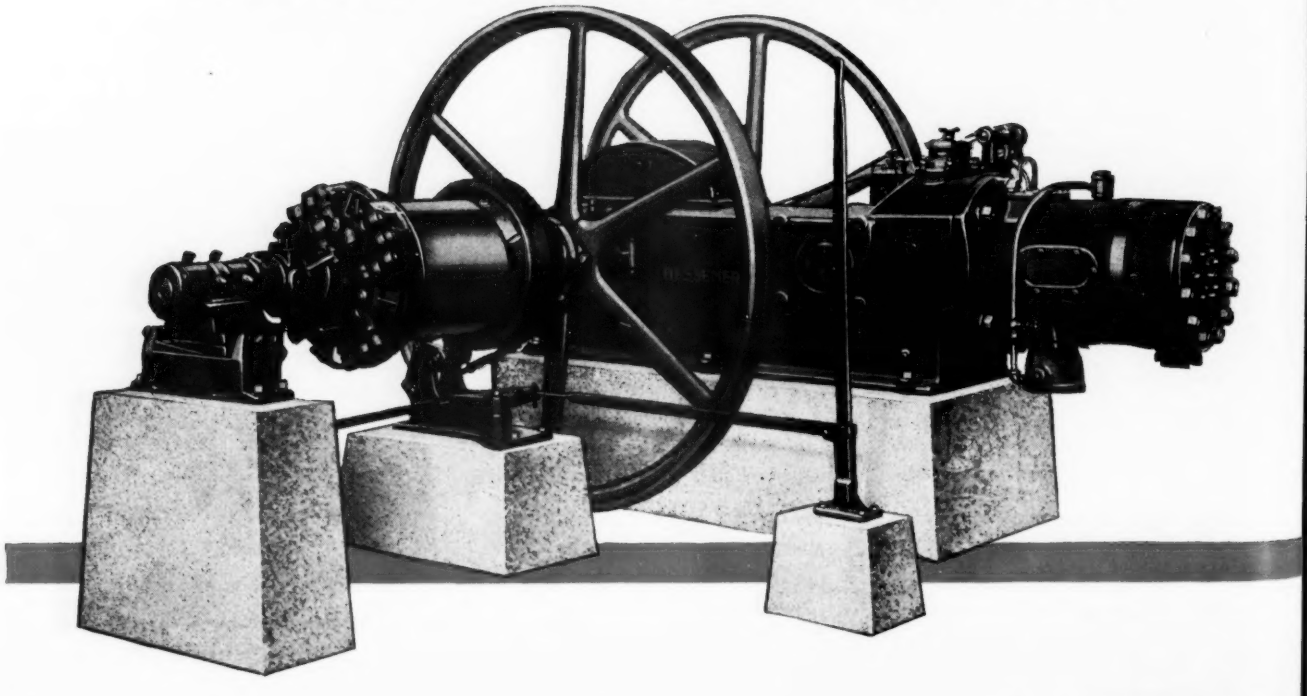


application to practical cases is subject to the influence of several disturbing factors which enter into ultimate oil yield, such as:

(1) Variable well cost.

(2) Variable market price.

(3) Variable rates of completion of offset wells.

(4) Variable sand and fluid factors with production.

(5) Etc.

In most cases, however, the influences of these disturbing factors are known or are reflected in the daily production and the decline rate of production. Special knowledge, special relations and skill have been developed which group these disturbing factors, limit and determine their character and magnitude of influence whenever and wherever they may occur. It is, therefore, possible to plan an efficient and economic program for the application of the well method of producing oil from a property.

Treating System Gives High Recovery

TULSA

A NEW device for treating bad oil functioning mechanically rather than chemically, is giving some excellent results. Although the principle involved is mechanical, the method does not do away with the treating chemicals. The various types of treating chemicals now on the market are used. The type of bad oil to be treated is the deciding factor in determining the chemical to be used.

The principle of the method of treating the oil is one which breaks the oil up, or re-emulsifies it so that the chemical treating agent can function more perfectly. The bad oil, whether fresh cut oil from a producing well, tank bottom settlings, or refinery sludge, is pumped through a three-inch line, with a one-inch steam line inside. The sediment is kept under about 250 pounds pressure.

After passing through about 500 feet of this type of line, it enters another 500-foot stretch of 3-inch line in which a series of baffles has been placed. Another 500-foot length of 3-inch line carries the oil to a screening tank, from which it is picked up by a high-pressure hot oil pump, and forced through another series of baffles into a settling tank.

The treating chemical is introduced to the oil through the same type of feeder as is used on flow lines for the same purpose. The chemical is put into the oil near the first pump, which picks the emulsion up from the gathering pit or tank. The 1-inch steam line inside of the 3-inch lead line is admitted to the latter through a 3 x 1 bushing made up in a tee placed in the 3-inch line.

The baffles in the line are merely 3-inch gate valves whose gates have been perforated by seven or eight ⅜-inch holes. By using gate valves in this manner, such baffles as are unnecessary at any particular time can be cut out by simply opening the gate.

The screening tank removes the dirt, grass, etc., which has accumulated in the emulsion. The oil in the screening tank is again heated, as the screening tank rests inside of a larger water filled tank. The water in the outside tank is kept heated by means of home-made water heaters, similar in design to the ordinary bathroom heater, but made out of pieces of discarded casing.

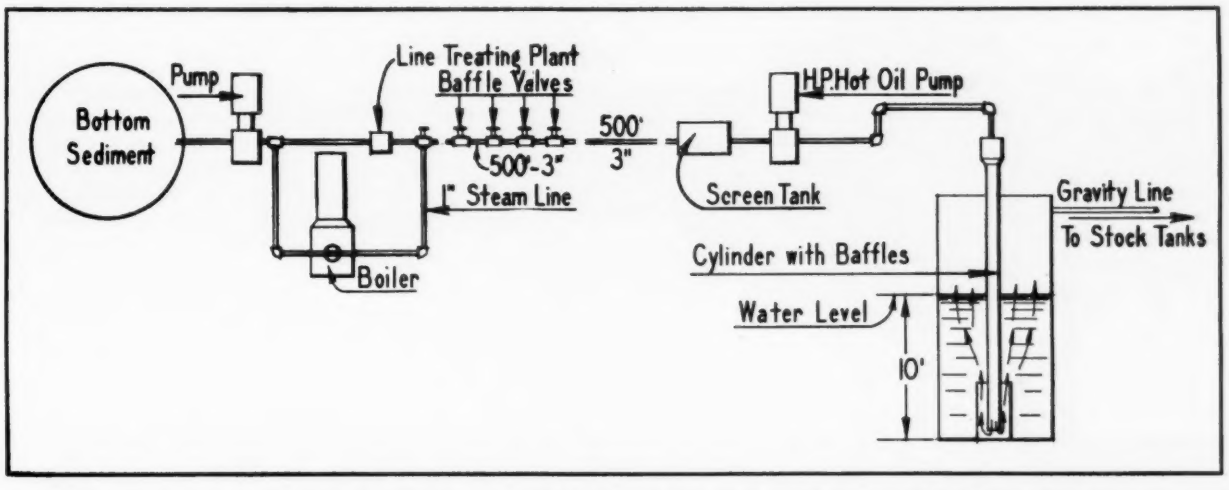
The emulsion, strained, heated, and containing the treating chemicals, comes out the bottom of the baffle-filled barrel through a disseminator. The bottom of the barrel is in a metal cylinder, which in turn rests on the bottom of the tank. A 10-foot water level is maintained in the tank, the oil rising through the water to the top of the tank and gravitating to a stock tank.

The breaking up of the oil by passing it through the baffles under pressure allows the treating chemical to function more efficiently according to officials of the Oil Reclaiming Co., the patentors of the process. One of the chief advantages claimed is the speed with which it will handle emulsion. More than 100 barrels an hour can be put through a plant such as has been described, while the number of plants can be doubled or tripled without increasing the number of men needed.

A man at each end, that is, one in charge of the boiler, supervising the first pump, and the feeding system, and another on the other end to take care of hot oil pump, etc, can operate three plants as well as one.

On emulsion from old tank bottoms in the Burbank area, the device has operated successfully, giving better than 40 per cent recovery. Upon analysis, the remainder was found to contain very little oil. It consisted mostly of water and dirt. It is probable, according to engineers with the company whose tank bottoms were treated, that recovery would have been higher than the 40 per cent recorded had the plant not been forced to shut down on account of bad weather.

The percentage of recovery was figured on the amount of emulsion run to storage, and it is considered probable that all the emulsion was not treated. It is therefore likely that the process would have shown a higher recovery than the 40 per cent shown by the company books had all the oil been treated.



New treating plant, which functions by putting emulsion through a series of baffles under pressure

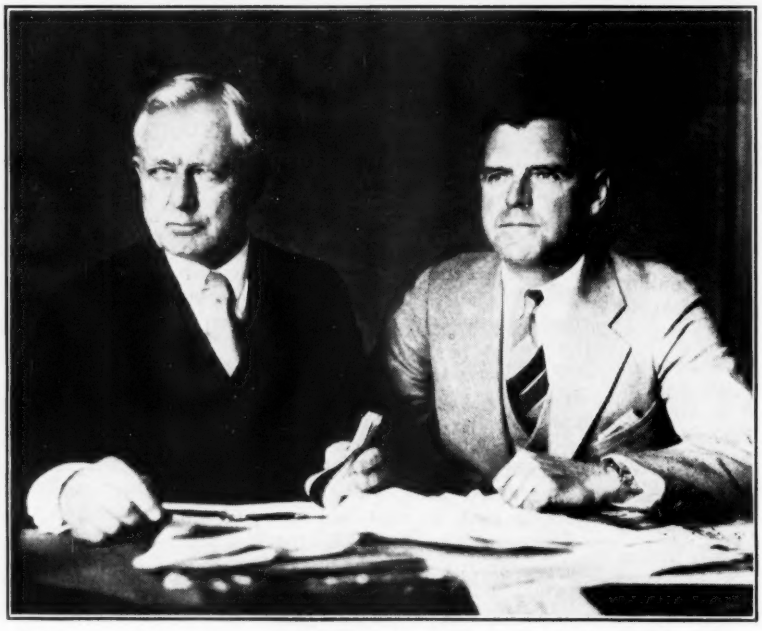
American Oil Men Study Wild Life Where Exploits Made History

By Paul Wagner
N. P. N. STAFF WRITER

LOS ANGELES

TWO American oil men, father and son, are taking their families for a trek into the veldt and kopjes of Rhodesia, where as chief of scouts under Lord Roberts the leader of the party performed thrilling exploits in the Boer war.

That leader is none other than Major Frederick Russell Burnham, honored friend of Field Marshal Lord Roberts, Dr. Leander Starr Jameson of Transvaal fame, and others who served in the building of the South African empire that now stands as a monument to the late Cecil Rhodes.



Major Frederick Russell Burnham and son, Roderick D. Burnham

With the Major goes Mrs. Burnham, who with her young son, Roderick D., lived through the stirring times when Rhodesia was known as Mashonaland and the Zulu territory was a place for only the hardiest of white pioneers.

Roderick, who is now head of the land department of the Union Oil Co. of California, said the other day that he "speaks Zulu better than English." Anyhow, he grew to young manhood in the midst of the Lobengula kingdom, where his father took part in the two Matabele wars that preceded the Jameson raid and the Boer uprising.

Only two members of the party of five making the trip were not a part of those stirring days that began in the early '90s. They are Mrs. Roderick D. Burnham and Miss Martha, 18 year old daughter of the second generation.

The present expedition is a peaceful one, in which the Major says Roderick will have the most important part. "Rod" is taking with him motion picture cameras and other equipment for studies of wild life, which his father expects to utilize in game conservation work as a member of the California State Park Commission. He will make the first use of a special type color film developed in the duPont laboratories.

On the journey of some 5000 miles, the party will cover the length of the Dark Continent and, incidentally, go around the world. The first lap will be a voyage from California to Australia, leaving May 12, from Los Angeles via San Francisco.

In June, the party will spend two weeks studying game conservation work of Australia and New Zealand. Thence, the party will go to Cape Town, South Africa, entering the jungle and emerging at Cairo four months later after a trip along the Nile.

On that lap of the trek, no doubt, the Major will visit the grave of Cecil Rhodes, silent and alone at "World's View," in the Matoppo mountains of Rhodesia. There in a moment of silent respect for the empire builder who first spurred the Major's admiration in foreign fields will be lived again the stirring days that few except Burnham can now recount.

The Major and I discussed at length the other morning the building up of what we affectionately call "our rogue's galleries." Mine is composed mainly of leaders in the petroleum industry; his includes, also, the autographed pictures of adventurous souls who made history with him in South Africa, the Klondike and elsewhere on the fringe of civilization.

"I made the mistake of not starting soon enough," he said; and as he reverently glanced out the window for a moment one could read in his mind memories of the days when he knew intimately the late Kitchener of Khartoum; the late Cecil Rhodes; and any number of brave souls who, as the Major said, are "thinning rapidly."

It is of interest to say here that the Major bears the distinction of having been allowed by King Edward to hold his rank in the Distinguished Service Order of Great Britain without renouncing his American citizenship. It was the Major who in 1896, accompanied only by an adventurous young man named Armstrong, sought out the M'Limo, treacherous high priest of the Matabeles, and slew him in his mountain temple in the Matoppos.

IN HIS book, "Scouting Two Continents," (Doubleday, Doran, $2.50) Major Burnham recounts the orders of General Carrington to "Capture the M'Limo if you can. Kill him if you must. Do not let him escape."

Having found the M'Limo's retreat, where the superstitious Matabeles dared not go, Burnham and Armstrong lay in wait until the high priest entered. Let the Major tell his own story, as given in the book:

"Here was the author of all our woes. Because of him my little daughter was dead and the bones of hundreds of brave men and good women were scattered on the veldt by hyenas.

Carrington's command * * * rang in my ears. The moment had come for action; but after all it was young Armstrong's skill that had located our arch-enemy, and I knew Armstrong intended never to ride back to Bulawayo until the M'Limo was dead.

"I whispered, 'Armstrong, this is your work. When he enters the cave you kill him."

"'No,' he replied, 'you do it.'

"So, as the M'Limo came in I made a slight sound and gave him his last chance to turn the white man's bullet to water (a promise the high priest had made to the natives in spurring them to attack the colonists). I put the bullet under his heart."

PEACE followed the downfall of the M'Limo in the second of the Matabele wars. Thereafter, South Africa was quiet until the stirring days of the Jameson raid and the Boer uprising.

No discussion of the Major's exploits could be done part justice without some, at least, of the foregoing references. After the Matabele war, he joined in the Klondike rush; but returned to Africa on receipt of a cable that Lord Roberts had appointed him chief of scouts on his personal staff.

After the Boer war and his consequent decoration by King Edward the Major returned to Pasadena, in 1904, to build a home.

Then came a long period of exploratory work on the deserts and in the jungles of Mexico. The World War brought that episode to a close, but more recently Hammond is associated with the Major in the Burnham Exploration Co., which owns approximately a 30 per cent net interest in the 12,500 barrels daily oil production from the Dominguez field of the Los Angeles Basin.

"Three generations ago," says the Major, "Great Britain began studying the conservation of wild life in Africa. Men of highly scientific bent undertook the work. Thousands of square miles are included in their game refuges and the study of animal life has been going on for years.

"They have propagated some animals and killed off others. They study the balance of wild life and among the wardens are veterinarians, biologists and specialists in research along such lines. They have learned much in the time.

"California has great open spaces suitable for far greater purposes in propagation of wild life than has been thought of heretofore. We have hardly made a start along this line. It will be a great thing in the future and I wish to see how the British have handled the situation in Africa, so that California may have the benefit of it.

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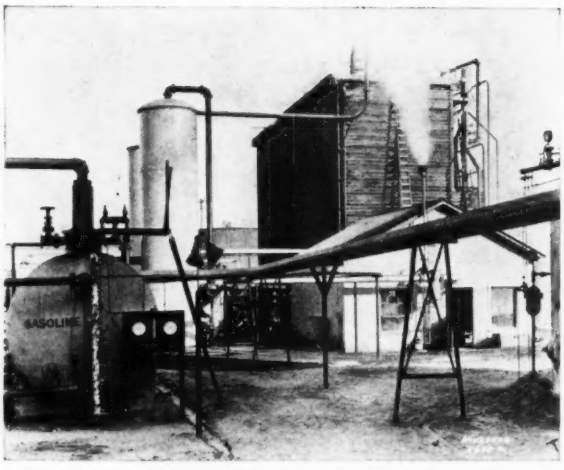

BANKLINE ABSORPTION PLANT SIGNAL HILL

This constitutes No. 8 of a series being shown of plants built by J. A. Campbell Company in 1928.

THIS 20,000-gallon plant was begun May 9. Started making gasoline June 16. 37 days, that's all, to construct this unit. *No, that isn't all, either.* The owners have since ordered three more Campbell Plants for their Santa Fe Springs production.

Upon the completion of the third of these units the Company's Santa Fe Springs Plant stepped up to Second Place among the World's Absorption Plants.

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Sholom Alechem To Meet

OKLAHOMA CITY, May 2.—More than 5000 oil men are expected to attend the Sholom Alechem International ceremonial at Oklahoma City on June 8, states Wood Dawson, Grand Crown Block of the organization, who is now busy arranging for the event, in cooperation with the Junior Chamber of Commerce. Those in attendance will include approximately 3000 seasoned rig timbers who were inducted into the organization at previous ceremonials, and 2000 green rig timbers who have yet to become acquainted with the "mysteries" of the order.

Russell Lathrop, Grand Log Book of the order, will arrive at Oklahoma City soon and will remain there until the Oklahoma City Derrick is organized. He will supervise the membership details, and assist in preparing other necessary arrangements.

Sholom Alechem Day will open here officially at noon on the date of the ceremonial, and the business session, including nomination of officers for the Oklahoma City Derrick, will be held between that time and 5 p.m. Timbers will register at headquarters during the afternoon. Names of officers nominated will be presented for election at the night session.

Between 5 and 6 p.m. the Sholom Alechemers will parade through the city, headed with a band that will furnish music during the entire afternoon at headquarters. Following the parade, the oil boys will feast at a barbecue, and then assemble for the ceremonial and entertainment.

Grand officers, in addition to Grand Crown Block Wood Dawson, who will participate in the ritualistic work, will include: Irby Kolb, of Duncan, Grand Slush Pit; Ward Merrick, of Big Springs, Texas, Grand Walking Beam; C. W. Tomlinson, of Ardmore, Grand Rock Hound; Jack Reardan, of Ardmore, Grand Tool Pusher; Earl Appleton Brown, of Ardmore, Grand Shyster; Bill Krohn, of Ardmore and Oklahoma City, Founder and Grand Skidded Rig; and Burney Phillips, Grand Inquisitor.

Other grand officers of the Sholom Alechem International comprise the Council of Grand Roustabouts which consists of: Erle Halliburton, of Duncan; F. C. Hall, of Chickasha; C. B. Goddard, of Ardmore; Wirt Franklin of Ardmore and Oklahoma City; H. B. Fell, of Ardmore, Bill Barrett, Shawnee; S. D. Butcher, Shawnee; and Ed Frank, Tulsa. Grand Skidded Rigs, in addition to Krohn, include: R. A. Birk, of Wichita Falls, Texas, Lloyd Noble, of Ardmore, and Otto Bradford, Ardmore.

West Texas

May Furnish Important Lubricating Oil Raw Material

By Paul Truesdell
N. P. N. STAFF WRITER

Article 2

CLEVELAND

MOTOR oils of high viscosity at high temperatures, the kind of oils being demanded nowadays by the automotive engineers for the lubrication of speedy cars, can be made from crude oil produced in the Yates field of Pecos county, West Texas.

This is asserted by A. J. Slagter, general superintendent of refineries of the Transcontinental Oil Co. and Dr. Sidney Born, his assistant. The Transcontinental has large production in the Yates field and its technologists have done a great deal of experimental work on these crudes, although no lubricating oils, so far as I know, have been made commercially from Pecos crude.

A pool of crude possessing such excellent lubricating qualities has been discovered in Loving county, north of Pecos, that the Rio Grande Oil Co., with headquarters in El Paso is planning to build a lubricating oil plant at once to develop a line of motor oils.

Other crudes of West Texas, in the opinion of refinery technologists who have made more or less of a study of them, promises to yield lubricating oils of satisfactory qualities.

These facts make it appear likely that West Texas, besides furnishing large quantities of gasoline high in anti-knock value, fuel oil and gas oil, may also supply at least in some measure, crude that will supplement the diminishing supplies of paraffin base crude as a raw material for the manufacture of lubricating oil, particularly the motor oils to meet requirements that are growing more and more exacting.

One specific sample of Pecos county crude run by Dr. Born in the laboratory gave a lube oil of the following characteristics.

Gravity	21.3
Flash	515
Fire	600
Vis. at 210	93
Cold test	35 F.

Yield of this oil was 8.7 per cent of the crude. While the cold test seems rather high, no test was made to determine the fluidity of the oil at low temperature, which, and not pour test, automotive engineers say, is the real test of a heavy motor oil for use in cold weather.

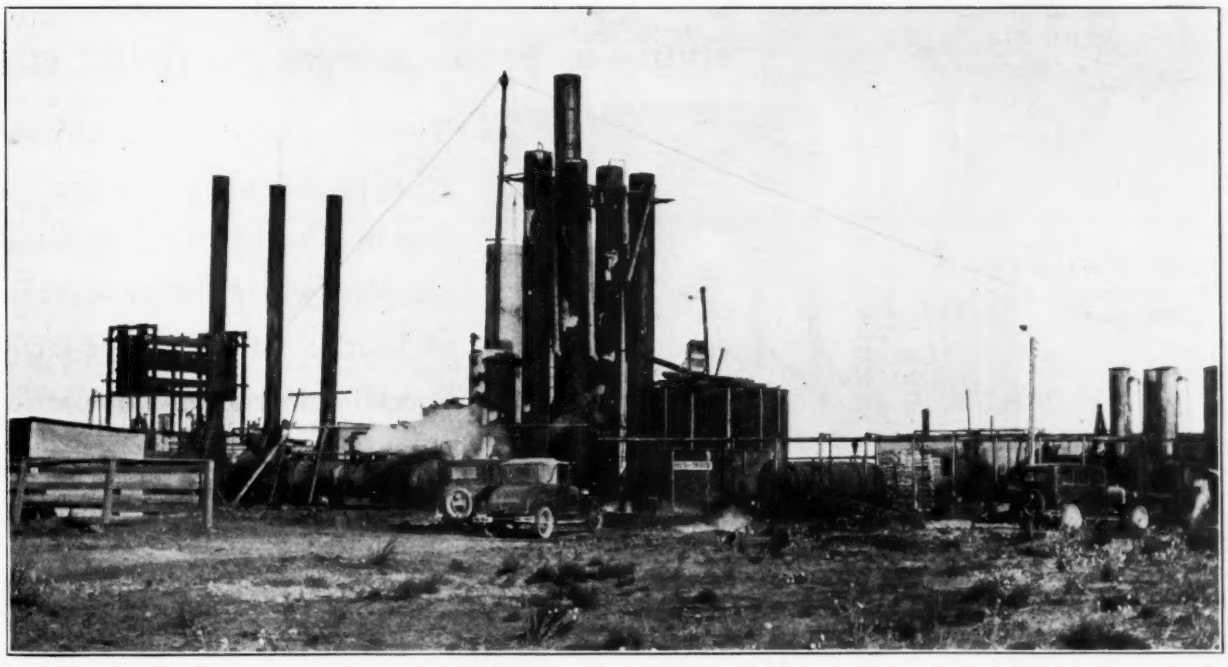
Pecos crude, it may be, can be more cheaply manufactured into lubricating oil than paraffin base crudes. This because it contains no wax, although it has many characteristics of a paraffin base crude. On this point, Dr. Born said in a paper presented at the American Petroleum Institute meeting in Chicago last winter:

"Pecos county crude contains considerable amounts of lubricating oil having a naturally low pour test, the lubricating oil fractions being obtained by direct distillation without the necessity of processing the distillate by means of refrigeration."

In discussing further the manufacturing of lubricants from Pecos crude, Dr. Born went on to say:

"The lubricating oil fractions can be readily treated, any desired color being obtained by the use of the proper amounts of acid and clay.

"The lubricating oils made from Pecos crude were carefully tested to see whether these oils had any cor-



Tonkawa Petroleum Corp. refinery at Pyote, Tex. A pipe still is being erected at this plant, part of which is shown in background at the left. N. P. N. Staff Photo

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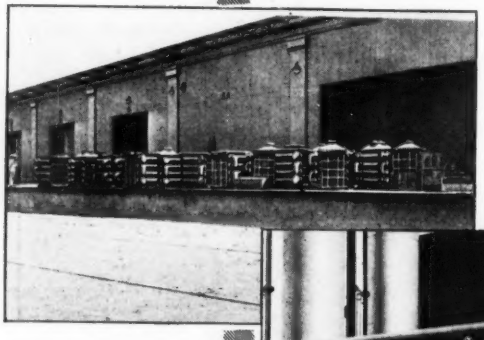
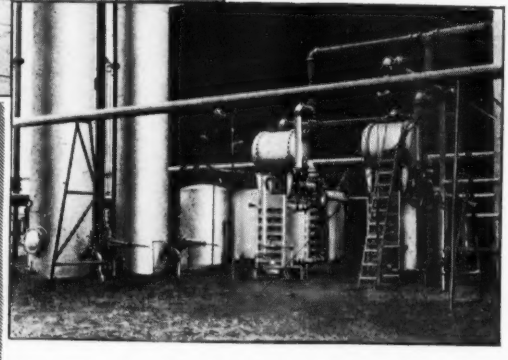


A shipment of Southwestern special cast iron condensers to a foreign country



Southwestern Heat Exchangers in a natural gas plant

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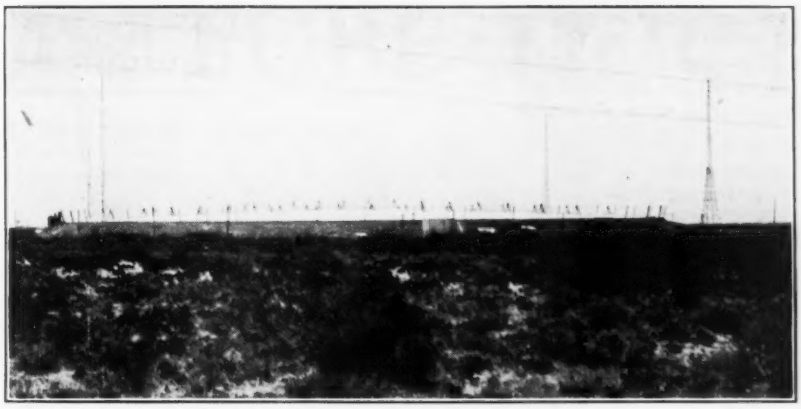
rosive action on metals. Polished copper strips were immersed in the oil, heated to 212 F. for a period of from 1 to 8 hours. At the end of that time the strips showed no discoloration, pitting or tarnish.

"Viscosities of the lubricating oil fraction from the Pecos crude were run at temperatures ranging from 100 F. to 350 F. and compared with typical samples of paraffin base and coastal lubricating oils. The Pecos lubricating oil viscosity curve followed the paraffin base oil curve very closely."



Million barrel underground concrete storage tank of the Shell Petroleum Corp. at Monahans, Tex. N. P. N. Staff Photo

AS A further indication of the quality of the oil from a corrosive standpoint, the Transcontinental technologists report the following experiment:

"Two quarts each of Pecos, Panhandle and Ranger crude were placed in separate 9-pound acid bottles and a sample of steel was immersed in the oil and another sample suspended in the vapor space above the oil in each bottle.

"The bottles of crude were allowed to stand at room temperature for 30 days. The mouths of the bottles were allowed to remain open so the vapors could escape freely and at the end of the 30 days the steel strips were cleaned carefully and weighed with the following results."

Showing loss as per cent by weight in 30 days.

	In Vapors	In Oil
Ranger	0.0051%	0.641%
Pecos	0.0098%	0.006%
Panhandle	0.0253%	0.849%

In describing the general characteristics of the crude from the Yates pool from other standpoints than that of lubricating oil possibilities, Dr. Born goes on to say:

"The average crude oil produced in this field shows a Be. gravity of 29.6 and the sulfur content is 1.55 per cent. One of the characteristics of this crude is its low pour test which enables it to be handled readily through pipe lines at all seasons of the year."

Dr. Born gives the gasoline from Pecos crude a higher anti-knock value than some of the other refiners have found, as follows:

"Another remarkable property of this crude is the fact that the gasoline produced from it by direct distillation has a high anti-knock value. Engine tests show that the straight run gasoline from Pecos crude has an automotive equivalence of 47 per cent benzol in admixture with Pennsylvania straight run gasoline."

The accompanying analysis is from the Transcontinental laboratories.

As to corrosive substances in the crude and the effect of their presence on the products made from it, Dr. Born says:

"The Pecos crude oil we have examined is practically free from salt water, tests showing that only approximately 10 pounds of sodium chloride could be obtained from the distillation of 1000 barrels. No magnesium or calcium chloride is present. In this respect, Pecos county crude differs markedly from Panhandle crude. Panhandle or Amarillo crude contains a large amount of saline matter, tests showing as high as 447 pounds per 1000 barrels of crude, a large percentage of this being present in the form of calcium and magnesium chlorides.

"The percentage of sulfur present in a crude bears no relationship to its corrosive properties. The form in which the sulfur is combined determines this. Hydrogen sulfide seems to be the most active corrosive agent, although the other sulfur compounds may cause corrosion due to oxidation to sulfurous and sulfuric acids.

"The exclusion of oxygen cuts down this phase of corrosion.

"Generally speaking, crude oil containing more than 0.4 per cent sulfur is classified as sour but in some cases crudes having a sulfur content even lower than this are more difficult to refine than other crudes which have as high as 2 per cent sulfur content.

* * *

"A preliminary investigation of the nature of the sulfur compounds in Pecos crude was undertaken and the following results were obtained.

Total sulfur	1.55%
Sulfur as hydrogen sulfide	.026%
Sulfur as elementary sul.	.025%
Sulfur as mercaptans.....	.052%

"This analysis indicates that most of the sulfur is combined as stable sulfur compounds and further investigation substantiates the belief that most of the sulfur is combined as a complex organic radical which is practically as stable as the hydrocarbons themselves. This stability is indicated not only by the failure to break down under high heat and pressure but also by their resistance to alkaline reagents.

"PECOS crude was heated with aqueous solutions of sodium hydroxide, sodium carbonate and "doctor" solution respectively, in a bomb up to a temperature of 375 F. and a pressure of 175 pounds per square inch. Sulfur determinations made before and after the above treatment showed a reduction of only .15 per cent in the sulfur content.

"A study was also made of the sul-

Yates Pool (Pecos County) Texas Crude

Gravity 29.6 Viscosity @ 100° F. 60 (Saybolt)
B. S. & Water None Sulfur 1.55%
Pour Test below 0° F.

Product	%	Grav.	IBP	20%	50%	90%	MBP	Flash	Fire	Visc.	Pour	Color
Gasoline	24.00	54.8°	140	226	276	358	435	.....	.....	.....	.....	.....
Burn. Dist.	6.20	39.7	.....	.....	.....	.....	.....	150	180	.....	.....	.....
Gas Oil	28.20	31.8	.....	.....	.....	.....	.....	200	225	.....	.....	3
150 Vis Lube	2.20	23.5	.....	.....	.....	.....	.....	360	430	150	0°	2
500 Vis Lube	18.70	22.4	.....	.....	.....	.....	.....	420	480	500	0°	3
Hy. Fuel	16.00	.....	.....	.....	.....	.....	.....	570	675	.....	.....	Black
Loss	4.70	(Includes treating losses)										

Skimming Analysis of Pecos Crude

Product	%	Grav.	IBP	20%	50%	90%	MBP	Flash	Fire	Pour	Sulfur
Gasoline	24.00	54.8°	140	226	276	358	435	.....	.....	.....	.30%*
Kerosene	6.20	39.7	.....	.....	.....	.....	.....	150	180	.....	.58%*
Fuel Oil	68.00	21.2	.....	.....	.....	.....	.....	240	285	0°	1.95%*
Loss	1.80										

*Sulfur content of crude distillates before treatment.

fur compounds in the raw untreated Pecos naphtha using the method recently developed by Faragher, Morrell and Monroe, for the analysis. The following results were obtained:

Hydrogen sulfide	.003%
Elementary sulfur	.012%
Mercaptans sulfur	.044%
Disulphide sulfur	.032%
Sulphide sulfur	.082%
Residual sulfur	.049%
Total sulfur	.222%

Concerning the methods of distilling and treating the products from Pecos crude, Dr. Born states:

"By a simple skimming distillation, 25 per cent of 437 end point blending naphtha can be removed, leaving a topped crude having an A.P.I. gravity of 22.1 and a sulfur content of 1.84 per cent. This topped crude can be cracked* directly, producing 45.40 per cent of cracked gasoline, 9.50 per cent of pressure distillate bottoms and 18.10 per cent of coke and gas.

"If the pressure distillate bottoms are recycled, the total yield of cracked gasoline will be 49.40 per cent, making a combined yield by cracking and topping of 74.40 per cent. In the above process, 37 pounds of coke and 428 cubic feet of gas are produced per barrel of original crude oil.

"If it is preferred to crack to a heavy fuel oil, the following yields will be obtained:

Blending naphtha	25.00%
Cracked gasoline	41.50%
Pressure distillate bottoms	3.70%
Bunker "C" fuel oil	20.20%
Loss (coke & gas)	9.60%

"The blending naphtha produced by the topping operations has an A.P.I. gravity of 54.8, initial boiling point of 140, 20 per cent over at 226, 50 per cent over at 284, 90 per cent over at 366, and a maximum boiling point of 430. The initial and 20 per cent point can be modified to meet U. S. Motor gasoline specifications by the addition of a small percentage of natural gasoline.

"The naphtha cut can be sweetened and made non-corrosive by treatment with caustic soda and litharge in the ordinary way. Our tests show that the best results were obtained by giving the naphtha a preliminary wash with 3 per cent of 25 A.P.I. caustic soda solution, following this up with 5 per cent (by volume) of 18 degree "doctor" solution. The "doctor" solution contained the equivalent of one pound litharge per barrel of naphtha treated. Two tenths of a pound of sulfur per barrel of naphtha was used to complete the reaction. Naphtha treated in the above manner was "sweet" and non-corrosive when tested according to A.S.T.M. Method No. D-130-27T.

*The results of "cracking" under various conditions are based on data obtained by the Universal Oil Products Co., Chicago.

New Equipment

S. F. Bowser & Co., Inc., Fort Wayne, Ind., has designed what it calls an Xacto meter barreling unit for use where lubricating, transformer, engine and cylinder oils and other liquids are being barreled. The device can be set to measure and discharge either 30, 50 or 55 gallons. An accurate counter maintains an accurate record of the number of packages filled. It is equipped with temperature and specific gravity control which compensate for the expansion and contraction of the liquids and insures accurate measurement based on 60 degrees F.

* * *

George D. Roper Corp., Rockford, Ill., has off the press bulletin No. 54 on Trahern rotary pumps, describing and illustrating rotary pumps of various sizes and of various adjustments for pumping gasoline and oil. A data table with each pump model gives capacities at various revolutions. These pumps are direct connected and motor driven and are for use at bulk stations, refineries, etc.

* * *

Leeds & Northrup Co., 4901 Stenton Ave., Philadelphia, Pa., has purchased property adjoining its plant here which adds 190,000 square feet to its plant, including about 85,000 square feet of floor space in a modern one-story building. The new building will be connected to the present one by a connecting wing. The company makes automatic control and recording instruments for temperature, conductivity, frequency, speed, combustion, etc.

* * *

Standard Steel Works, Kansas City, Mo., has perfected the tri-point suspension and shock-absorbing saddle strap supports for truck tanks.

The tri-point suspension, it is claimed, prevents both the tank and the truck chassis from twist and strain, while the strap supports cushion the tank against road shocks.

The rear of the tank frame is anchored rigidly to the chassis on each side, providing two points of support, while the entire front rests on a single point of suspension—the new Standard pivoted socket bearing.

The shock absorbing saddle strap supports form a cradle in which the tank is safely cushioned against road shocks. The impacts and strains of transportation die out in these saddle straps, which are of mild steel, covered with webb belting and pivoted on special steel bolts mounted in cast steel brackets.

* * *

S. F. Bowser & Co., Inc., Fort Wayne, Ind., recently added to its line of oil marketing equipment, a complete system for receiving, storing and filtering crankcase oil for use in oil burners.

This system receives dirty oil from automobiles, stores the oil and feeds it gradually through a filter where the dirt, metal particles, sediment and other foreign matter are removed, and stores the clarified oil in a clean storage tank from which it may be drawn for use in the oil burner.

This reduces operating expense by utilizing crankcase drainings. The system is simple to install and operate and expense is negligible, the company says.

Stocks of All Oils Gain in March

NEW YORK, May 4.—For the first time in many months, stocks of all oil products, increased without exception, according to the preliminary summary of the American Petroleum Institute for March.

Pipe line and tank farm gross domestic crude stocks east of the Rockies gained 3,118,000 barrels in March, compared with a gain of 2,073,000 barrels in February.

Gasoline stocks rose only 1,175,000 barrels in March, compared with an increase of 4,026,000 barrels in February and 4,746,000 barrels in January. March stocks are at refineries east of California operating at 86 per cent of their operating capacity.

Kerosene stocks gained 106,000 barrels, compared with a decline of 929,000 barrels in February.

Gas and fuel oil stocks rose 282,000 barrels in March, following a decrease of 2,005,000 barrels in February.

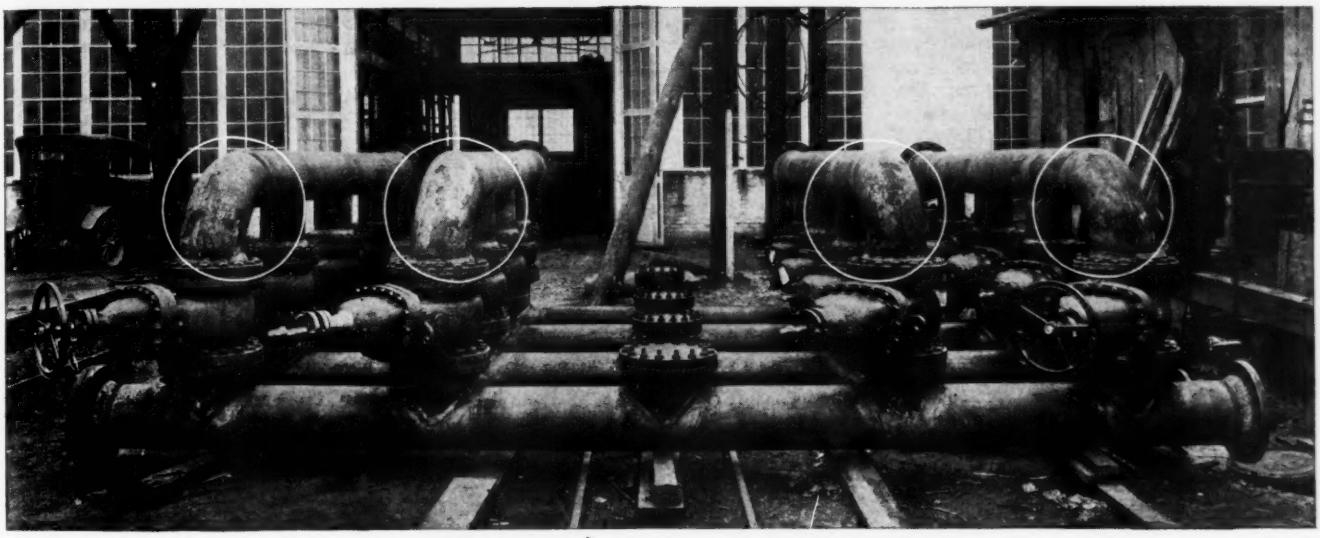
Stocks of lubricating oils increased 205,000 barrels in March, compared with an increase of 29,000 barrels in February.

Stocks of all refined products gained 5,016,000 barrels, compared with a net increase of 2,517,000 barrels in February, and 3,455,000 barrels in January.

Stocks of foreign and domestic crude oil east of the Rockies increased 1,301,000 barrels and 1,355,000 barrels respectively, a total increase of 2,656,000 barrels.

PHILADELPHIA, May 3.—The Brown Instrument Co., after completing a two-story addition to its plant here less than a year ago, finds it necessary to build another two-story building. A one-story wing of the plant will be demolished for the new addition. A new central wing of two stories and basement will also be built. Cost of the new buildings will be $200,000. About 50 per cent more floor space will be added.

Where to use TUBE-TURNS



TUBE-TURNS used in manifold construction

to save space—time—money

In Refineries: Replacing mitre-welded joints and fittings, to lower the pressure drop through batteries of exchangers, *reducing friction and pumping costs.* In water discharge lines at the top of atmospheric cooling towers, *to give smooth flow, reduce friction.* As return fittings in tube stills, *reducing resistance to flow, saving space.* In the line leading to centrifugal pumps (especially at final turn before entering suction opening) *to lower suction head.*

In Natural Gasoline Absorption Plants: Most of the refinery uses, *plus:* All interconnecting piping, *to gain maximum of pipe surface in minimum of space.* In the suction and discharge lines to compressor units, *eliminating leakage and corrosion, reducing friction.* In the discharge and recirculating lines outside the compressor house, for making welded cross-connections and by-passes in the small-size piping.

In Pipe Lines: Wherever smooth, short turns are desired or necessary; and wherever drip connections are made in a gas line. In pumping all oils, especially of high viscosity, *to prevent eddying at turns, thereby reducing turbulence and pressure drop.*

In Production: In lines carrying gas and oil from wells to separators, dehydrators, and to other departments, *to save labor and expense of mitre-welding and of making templates.*

TUBE-TURNS, *Incorporated,* 1250 Logan Street, Louisville, Kentucky

Distributors Carrying Stock

THE MASON EQUIPMENT CO.
1918 Vermont Ave.
Toledo, Ohio

MAINTENANCE ENGR. CORP.
1400 Conti Street
Houston, Texas

THE MOORLANE CO.
805 Tulsa Loan Bldg.
Tulsa, Okla.

BUCK & STODDARD
310 Union Oil Bldg.
Los Angeles, Cal.

TUBE-TURNS

No Thinning of Outside Wall—No Buckling of Inside Wall

ON THE LAZY BENCH

She was very rich and he was very poor. She liked him, but that was all, and he was well aware of the fact. One evening he grew somewhat tender and at last said: "You are very rich, aren't you, Helen?"

"Yes, Tom," replied the girl frankly. I'm worth about two million dollars."

"Will you marry me, Helen?"

"Oh, no, Tom, I couldn't."

"I knew you wouldn't."

"Then why did you ask me?"

"Oh, I just wanted to see how a man feels when he loses two million."

—Magnolia Oil News

* * *

When Adam in bliss
Asked Eve for a kiss,
She puckered her lips with a coo.
With looks quite ecstatic,
She answered emphatic,
"I don't care, Adam, if you do."

—Doherty News

* * *

Johnnie (to new visitor)—"So you are my grandma, are you?"

Grandmother—"Yes, Johnnie, I'm your grandma, on your father's side."

Johnnie—"Well, you're on the wrong side; you'll soon find that out."

—Skelly News

* * *

A man had been riding in a stuffy smoking car, and when the train stopped at the station, he went out on the platform and took deep breaths of fresh air. In his enjoyment he said to the brakeman: "Isn't this invigorating?"

"No, sir," was the reply, "this is Coshocton."

—Independent Topics

* * *

Darling: "Mamma, I have a surprise for you."

Mother: "Yes, darling; what is it?"

Darling: "I've swallowed a nail."

—Pure Oil News

* * *

Cop: "Hey, you, why don't youse look where yer goin'?"

Woman: "Well, you see, officer, this is the first time I've ever driven from the front seat."

—Magnolia Oil News

* * *

Solicitor: "Would you indorse our cigarettes for two thousand dollars, sir?"

Celebrity: "For two thousand dollars I'd smoke the damned things."

—Pure Oil News

* * *

The story is told that a certain young man was recently speeding merrily along the road when he caught up to a party of children on their way to school. He asked them if they cared to ride, and for an answer they piled into his Ford until it was so completely filled that one little girl had to sit on the driver's lap. She was a plump little thing and the driver cuddled her close to keep her away from the steering wheel.

"Do you like school?" he asked her.

"Yes sir," she lisped.

"Do you go every day?"

"I haven't missed a day this year," the little girl replied.

"Good little girl!" said the driver, kissing her soft cheek. "Do you like your teacher?"

"Yes, sir," said the girl. "I'm the teacher."

And the Ford darned near went into the ditch!

—The Loreco Diamond

* * *

"Are you sure these field glasses are high-powered?" asked the potential customer.

"Madam," replied the ambitious salesman, "when you use these glasses anything less than ten miles away looks like it's behind you."

—Skelly News

* * *

Two Osage Indians took on so much firewater they wound up in a Tulsa hospital.

"How do you feel now?" a pretty nurse asked the first Indian the next morning.

"Me all right," said Indian No. 1. "But Joe very sick. Joe he blind. Last night five turkey buzzards with big plug hats sit on bed and Joe he no see 'em. Joe his eyes very sick."

—The Loreco Diamond

* * *

An Englishman was visiting this country for the first time, and as he was driving along the highway, saw a sign "Drive Slow. This means YOU!"

The Englishman stopped in surprise and exclaimed, "My word, how did they know I was here?"

—Skelly News

* * *

Young Wife: Aren't you the same man I gave some biscuits to last week?

Tramp: No mum, and the doctor says I never will be again.

—Union Oil Bulletin

* * *

Gold Digger: "Men are like tooth paste tubes."

Another: "How's that?"

The First: "You've got to give them a squeeze before you can get anything out of them."

—Magnolia Oil News

* * *

Policeman: "How did the accident happen."

Motorist: "My wife fell asleep in the back seat."

—The Oil Can

* * *

Indignant Parent (6 a.m.): "Young man, what do you mean by bringing my daughter in at this hour?"

Flaming Youth: "Well, I gotta be at work by 7."

—The Loreco Diamond

* * *

The freshman across the hall says he likes his new topcoat very much, only he can't get used to the wood across the shoulders, and the hook keeps pushing his hat off.

—Union Oil Bulletin

* * *

The Girl: "Yes, I shudder when I think of my 30th birthday."

The Beast: "Why, old thing, whatever happened?"

—Doherty News

* * *

Hell for garage mechanics will be a land of abundant grease and no steering wheels to wipe it on.

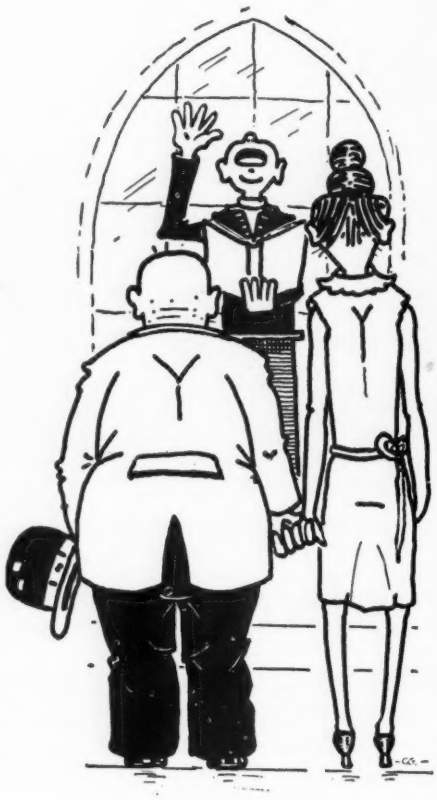
—The Oil Can

* * *

Eph: "How'd you git along ridin' in them thar sleeping cars when you took your trip?"

Sim: "Got along all right but I caught a colored feller tryin' to sneak away with my boots an' made 'im bring 'em right back."

—Skelly News



A permanent weld

Some Things That Can Cause a Fire And Hinder Putting It Out

By James H. Herbert*

Presented at National Petroleum Association Meeting, Cambridge Springs, Pa., April 26

AT THE annual meeting of this association in Atlantic City I had a more or less discouraging report to give concerning the activities of the Fire and Safety Marshals. Since that time, however, the marshals have been more active. They held their annual meeting in Pittsburgh, in January, which was attended by a group of marshals, who in themselves made the meeting an interesting one because of the active interest which each one had in it and because of the contributions which each one gave to it.

One of the groups which was formerly dormant has now continued its work; two other groups are holding regular meetings, and the two remaining ones which are not active at the present time will, it is hoped, start their activities again this spring.

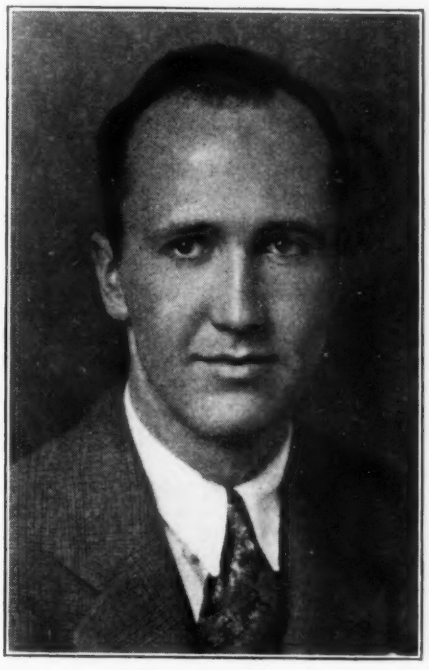
Several causes of fires were enumerated at this and other meetings. Also, examples were given where the extinguishing of fires was or might be retarded due to faulty equipment.

I would like to bring a few of these points to your attention to show again the information which may be obtained by each marshal who attends, not only the marshal's annual meeting, but also the group meetings. They show clearly how one marshal's experiences may help another.

I shall read from reports given by the refiners where two fires occurred:

"The basement of our centrifuge building has located therein small run-down tanks used for holding slop wax, slop oil and a mixture of wax-free oil and benzine, which product is pumped away for reducing in the stills for the manufacture of long residuum and bright stock.

"A by-pass valve to one of these tanks was left open which permitted a stream of naphtha and lubricating oil blend to overflow the tank and run down the sewer to a separator box below the track, the quantity overflowing evidently being of considerable proportions. The separator box permitted some of the liquid to run down the waste ditch to the river bed, where it became ignited by boys playing on the bank or perhaps a passing engine or perhaps from some other cause.



James H. Herbert

"The flames rapidly spread to the separator box from whence it flashed through a 12-inch sewer a distance of possibly 75 feet to the basement of the centrifuge building. Were it not for the fire at this location little or no damage would have been done, and the hazard would have been rather slight.

"Unfortunately, this particular sewer was not equipped with a proper trap to prevent the passage of the flames and vapor."

Another report reads:

"While loading, a tank car ignited at the dome from no apparent cause. There was about one foot of gasoline in the car when this happened. We kept the pump going and with an ordinary 2½-gallon soda and acid extinguisher played directly across the dome. The blaze was extinguished without any loss.

"The possibility of a large fire was very great. If the pump had been stopped, the car possibly would have ignited inside and blown to pieces with loss of life and property. After a thorough investigation we found that the street cars on crossing the tracks, transmitted an electric charge down the rails, and the spout, resting on the dome, produced the spark causing the ignition. As a means of prevention of similar fires, we have grounded the rails at both lines on the loading rack, resulting in eliminating danger from that source."

Another fire was caused by the backfire of an automobile tank truck which backfired near a tank of gasoline and which ignited the tank.

Another by pumping cold benzine into a filter half full of warm and oily fullers earth.

Another by vapors igniting from still relief valves and in turn catching fire to the oil screen on top of a condenser box.

Bearings in induction motors located in gaseous positions should be tested regularly to see that the revolving rotors do not drop. This is the principal manner in which a large spark may be created from a motor. Such an inspection should be made regularly, especially in centrifuge buildings.

A DELAY in extinguishing a fire was caused due to the fact that a section of water hose was plugged when the inside rubber lining was torn loose by the water pressure and jammed in one end, preventing the water from passing through.

A delay was caused because the fire steam lines to a tank were rusted and cracked, making the line inefficient as far as carrying steam was concerned.

In one refinery, a foam generator was found to be plugged by a field mouse which had crawled into the small check valve opening to make a nest, and had been unable to leave.

A delay was caused by the presence of the fire water pumps in the main pump house of a refinery where a fire had its origin.

A delay was caused by the presence of fire hose joints with two separate types of couplings so that they could not be coupled together.

The above mentioned fires have

*Assistant superintendent No. 2 works, Standard Oil Co. of Ohio, Cleveland.

Cracking

The development and practice of cracking processes have been followed consistently in National Petroleum News since pressure distillation first became a factor in the refining industry.

Here are 42 cracking stories that have been published the past 12 months:

1929

Control gasoline and fuel quality in cokeless cracking process May 1, p. 69
One cracking unit is now whole refinery May 1, p. 76
Patent club offers to license cracking plants perpetually Apr. 24, p. 37
Operation of Gyro process described Apr. 24, p. 40-a
Cracking plants now designed for individual plant needs Apr. 24, p. 83
Cracking still coke, acid sludge, make fuel briquets Apr. 10, p. 68
Cracking costs handed knockout in continuous 60-day run Apr. 3, p. 73
Gyro to license vapor phase process March 13, p. 37
Siamese skimming, cracking plant gets 60% gasoline March 13, p. 69
Improving fractionation in cracking systems March 13, p. 78
Washing heavy cracked naphtha with soap gives color Feb. 20, p. 61
Refinery gets 70% light oil yield Jan. 9, p. 72
How to make benzol from natural gas Jan. 9, p. 79
Tailors refinery to fit the market Jan. 2, p. 26

1928

Factors affecting safe limit for gum in gasoline Dec. 19, p. 75
Sulfur in gasoline Dec. 12, p. 31
Coating to protect cracking units from corrosion Dec. 12, p. 86
Developments in refinery technology Dec. 5, d 79
Formation of acetic acid in heat and pressure cracking Dec. 5, p. 113
Cracking will have to make fuel for 75,000,000 cars Nov. 21, p. 88
Makes gasoline at low cost Nov. 7, p. 61
Injecting heated gas to vaporize oil Nov. 14, p. 35
Hot oil recirculating unit makes finished gasoline Oct. 17, p. 82
High pressures, corrosive crudes and heat exchange problems Oct. 17, p. 88
Percolating filter plans analyzed Oct. 17, p. 94
Economies in modern gasoline plant Oct. 17, p. 125
Better fractionating equipment saves heat Sept. 26, p. 91
Phases of refinery operations discussed Sept. 19, p. 64
Leamon continuous treating process for cracked gasoline Aug. 22, p. 65
Light fractions from stabilizer offer new opportunities July 25, p. 21
Recovery of gasoline from gases—Bayer charcoal process July 4, p. 67; June 27, p. 97
Refinery cuts costs by circulating system June 20, p. 29
Cutting of refining losses offers field for profits June 20, p. 92
Careful fractionation can cut cost of treating cracked gasloine Apr. 25, p. 48
Good products at low cost Apr. 25, p. 85; Apr. 18, p. 61; Apr. 11, p. 54
Bigger products for refiners Apr. 11, p. 28; Apr. 4, p. 25; Mar. 28, p. 28; Mar. 14, p. 42

Back copies of any of the above issues are 25c a copy. On issues that are exhausted, photostats will be furnished at 40c per page. Libraries in the larger cities generally keep back files of National Petroleum News complete.

National Petroleum News
Main Office: 1213 West Third St. Cleveland, Ohio

started from causes which may be attributed to carelessness in construction. Fires caused from tanks running over; failure to open and close certain valves; using an acetylene torch to cut a hole in a condenser box located near a still receiving house; using an electric drill in a vaporous atmosphere, smoking, and the like are a result of carelessness of labor.

Both problems may be coped with satisfactorily but the former—from construction—may be overcome in a more positive manner than the latter. No man is faultless and as a result he is bound to make careless mistakes which may cause a fire, but positive steps may be taken to overcome causes where mechanical means may be pursued.

FIRE pumps can be isolated; steam lines and fire hose can be tested; employees' clothes can be washed by the refineries in a safe manner to overcome the practice of employees washing their own in gasoline in undesirable locations; bearings in motors can be tested by trained electricians; overload relays can prevent sparking; static electricity can be overcome by proper grounding methods; traps can be placed in sewers to prevent fire from traveling through them to hazardous locations; vapor detectors can now be used to determine whether or not the mixture of gas and air in a tank or building is of an explosive nature and so on.

Accident prevention in a refinery rests principally in the education of the employees. There are not the gears, saws, hydraulic hammers, and dangerous types of machinery in the oil refineries that are found in practically every other industry. Accidents in refineries are caused in the majority of instances from carelessness on the part of the men. They, good heartedly, attempt to lift objects which are too heavy; they take unnecessary chances in jumping from one tank to another.

In place of following the ordinary means of travel, men will take short cuts across condenser boxes, cross over elevated pipe lines; construction men often leave behind hazardous conditions such as boards with nails protruding through them; they fail to erect temporary hand rails on walkways and so on.

Oil companies should spend money to protect their men from accidents by making working conditions safe, but accidents will continue unless the men have been made "safety wise."

Safety posters and lectures on the subject are without doubt very splendid and necessary means of teaching men safety principles.

The Bureau of Mines had a method which is an indirect one, but one which the speaker believes to be the most positive one—and that is in giving "First Aid" instruction.

In teaching men the methods of giving first aid to the injured,—in making men work from 15 to 20 hours in doing nothing but applying dressings, splints, and bandages to supposed broken legs, lacerated heads, etc., the bureau is giving the best possible instructions toward accident prevention. It is the indirect influence of this work upon the minds of the men which causes them to work safely. *They are shown the results of accidents.*

First aid instruction has been given to the employees in the refineries in the Bradford and Warren groups and to the employees in the Emlenton Refining Co.

There is a place for a fire and safety marshal in every refinery. Where two or more refineries are in the same district there is a place for a cooperative group of marshals who should meet together as often as possible to discuss fire and accident prevention, and to profit by the experiences of each other.

If the marshals in a group meet together twice a month for half a day at each meeting, and the labor cost to each refinery due to the marshal's absence is $5 for each meeting, the total cost to a refinery for one year would be $120. This is cheap insurance when the benefits are considered.

The origin of the fires which have been listed are causes of which we are all conscious. We know that a fire could be started by any one of them. We know that the faulty equipment as shown will retard the extinguishing of a fire. But nevertheless, these conditions exist in many refineries today. It is so difficult to overcome them and to discover them unless a specific amount of time, labor and thought is given to them.

THE Fire and Safety Marshals are formed into a cooperative group to do this work. The cost of supporting this work is slight. The Fire and Safety Marshals are enthusiastic about their work because of the nature. It is adventuresome, so it only needs the sanction of the executives to permit them to continue efficiently with their groups or to start groups where none are in existence at the present time. Each group and each fire marshal have many things to accomplish during the coming year and it is hoped that each group will not only have a splendid report to make at this meeting a year from today, but that each report will be confirmed by deeds.

Along the Air Lanes

Airplanes Save Time for Executives

LOS ANGELES

IT IS a scant four hours from Los Angeles to San Francisco by air against approximately nine hours traveling on a fast train; El Paso can be reached in seven hours by flying, compared with nearly 24 hours required from Los Angeles on a good train.

Therein lies the answer to the growth of air transportation in the Pacific Coast oil industry. Valuable time is saved executives or others on hurry-up trips and organization affairs are speeded accordingly.

It is told of one Los Angeles oil executive that he frequently leaves his office about 3 o'clock in the afternoon, flies to San Francisco for a dinner engagement and, if necessary, makes a night trip back to be at his own office the next morning.

A similar condition influenced the Rio Grande Oil Co. in its purchase of a new F10A tri-motored Fokker, which will be used mainly for travel between Los Angeles and El Paso, or intermediate points. The Rio Grande has a plant at Phoenix, Ariz., and is engaged in field development in Loving county, West Texas.

Charles S. Jones, vice president and general manager of the Rio Grande, has found that it takes only nine hours flying from Los Angeles for him to visit properties under development in Loving county. He can make the trip in less than three days without night flying as compared with fully a week of tiresome train schedules in the past.

Continental Oil Co., which owns a plane at Denver for executive and sales department use, has flown it across the mountains to California on occasion, when the need for speedy transportation created an emergency.

Four of the major oil companies on the Pacific Coast operate planes for various uses, but only two of them keep their craft at work steadily for purposes other than sales department or good will application.

Richfield Oil Co., whose president, J. A. Talbot, also heads the Western Air Express and the Fokker Aircraft Corp. of America, uses its F10A type plane almost exclusively for executives and good will. The tri-motored Ford-Stout plane owned by the Standard Oil Co. of California, at San Francisco, is also in similar general use.

San Andreas rift, or earthquake fault, crossing the Tehatchapi mountains south of the San Joaquin Valley of California

The Standard's smaller Boeing plane, known as its No. 2, has been used to considerable extent also for advertising purposes. The Richfield's two small planes, a Stearman J-5 and a Waco 10, are used exclusively in administrative sales contact.

Union Oil Co. of California uses one Travelair and two Eaglerock single motored open planes in sales contact exclusively. Associated Oil Co., operating a single motored Boeing, uses its plane for aviation department sales and to some extent for quick transportation of executives.

Shell Oil Co. (California), subsidiary of Shell-Union Oil Corp., and General Petroleum Corp., subsidiary of Standard Oil Co. of New York, use no planes on the Pacific coast except as they may charter them for special purposes.

Aerial photography for geological work is utilized by most of the larger operators in California. They do not themselves, however, carry on the work. This is done by specialists such as the Continental Air Map Co., Los Angeles, or the Fairchild Co., which maintains offices for such work in various parts of the country.

Administrative geologists may fly over an area mapped from the air to check the photography against their own visualization, or for other purposes, but no attempt is made to handle the highly specialized mapping themselves.

Some of the results of aerial mapping have been found amazing, even to those accustomed to mountain country and foothills back from the California valleys.

An accompanying picture taken from an altitude of about 7000 feet with a "hand camera" shows the possibilities of aerial photography under specialized detail work. The picture shows the San Andreas rift, or earthquake fault, which enters the state from the Pacific ocean, near San Francisco, and extends southeasterly through the mountain ranges of California.

The earth "dent" seen by reference to the picture, of course, represents major-throw faulting seldom caught in amateur photography but elemental as regards application of aerial mapping. The fault runs diagonally across the picture.

Planes operated for field department use of oil companies have been generally chartered in an emergency. Manufacturers and sellers of oil field specialties have to some extent, however, operated their own planes on a service basis.

J. Warren McClatchie of the McClatchie Manufacturing Co., airplane engine manufacturer, and seller of oil equipment, has taken a keen interest in the operation of his owned plane. The Stoody Co., manufacturer of Stoodite, uses a plane to get its sales manager around the country quickly and also for emergency deliveries. Similar use has been made of a plane owned by the J. C. Axelson Co.

J. E. (Brick) Elliott, president of the Elliott Core Drill Co., Los Angeles, and a group of oil producing companies in the Los Angeles Basin, uses his Fairchild plane, almost exclusively for long trips.

Bankrupt Skimming Plant Turned Into Profitable Enterprise

By Paul Truesdell
N. P. N. STAFF WRITER

TULSA

SEVEN old shell stills in a small skimming plant that once went broke and was abandoned, last year ran 800,000 barrels of Seminole crude into gasoline, kerosene, stove distillate and fuel oil, netting its owners a good profit.

Notwithstanding the fact that the stills are of various sizes, set at various heights and originally designed for batch operation, they are being run as a continuous battery and are processing crude at an average cost of 19 cents a barrel, including depreciation, taxes, overhead and all other items properly chargeable against operation, according to the owners.

The refinery is that of the White Oak Refining Co. at Allen, Okla., 125 miles south of Tulsa.

Operations during the year that the refinery has been under the present ownership have been carried on in apparatus inherited from the previous owners. Comparatively little mechanical change has been made in the plant. The success of the company is attributed to skillful management and good marketing, keeping down costs at every point.

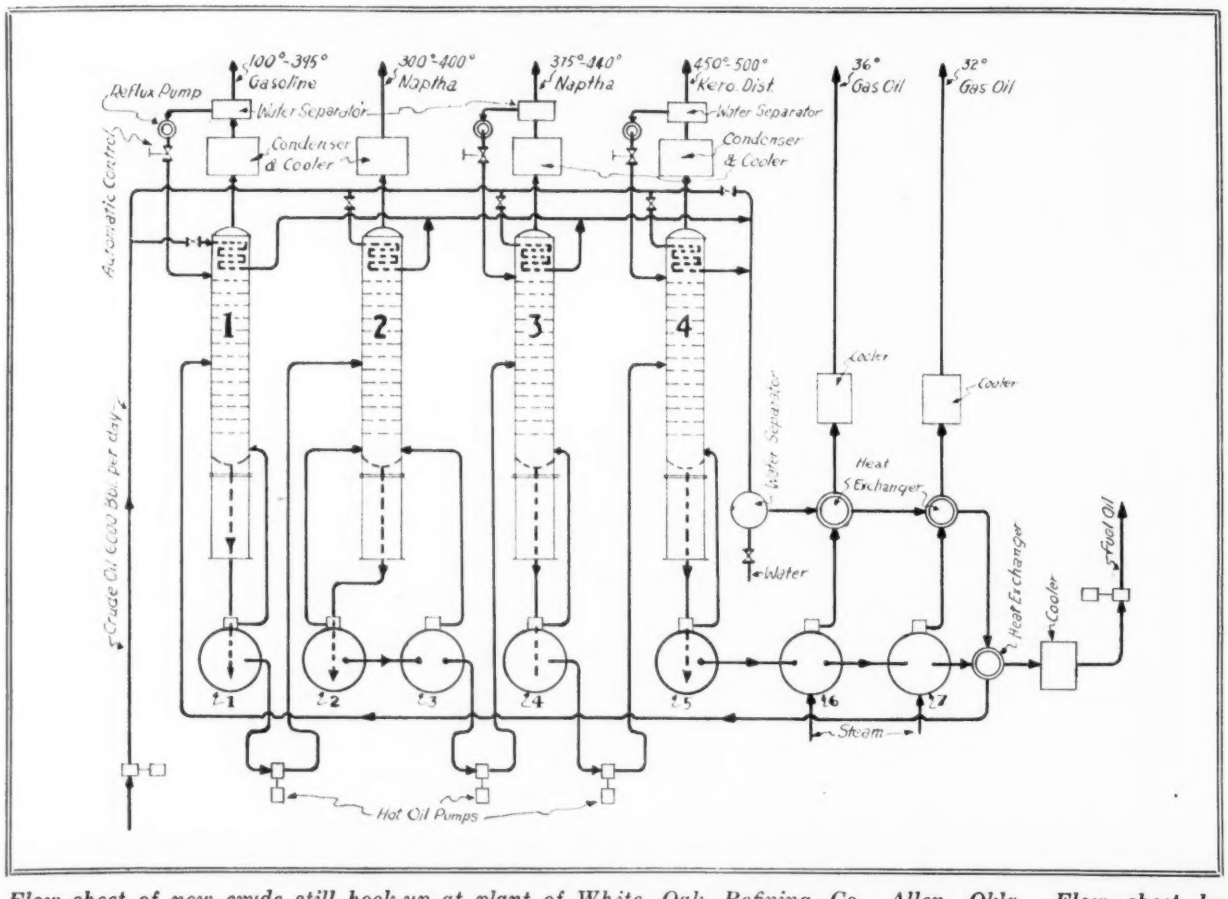
While the refinery has been going ahead making money, the company has been proceeding with construction of a modern battery of shell stills with the latest type fractionating equipment, operating schedule and so on. This new equipment will be ready for operation within 30 days or so, it is expected.

The new construction also includes a Jenkins cracking unit of the latest type, which is expected to process 1000 barrels of charging stock a day.

A new boiler plant consisting of four 150-horsepower Brownlee boilers has been recently finished, just in time to take over the load from the old battery of three small boilers before they had to be shut down for extensive repairs. The latter will be retubed and held as standbys.

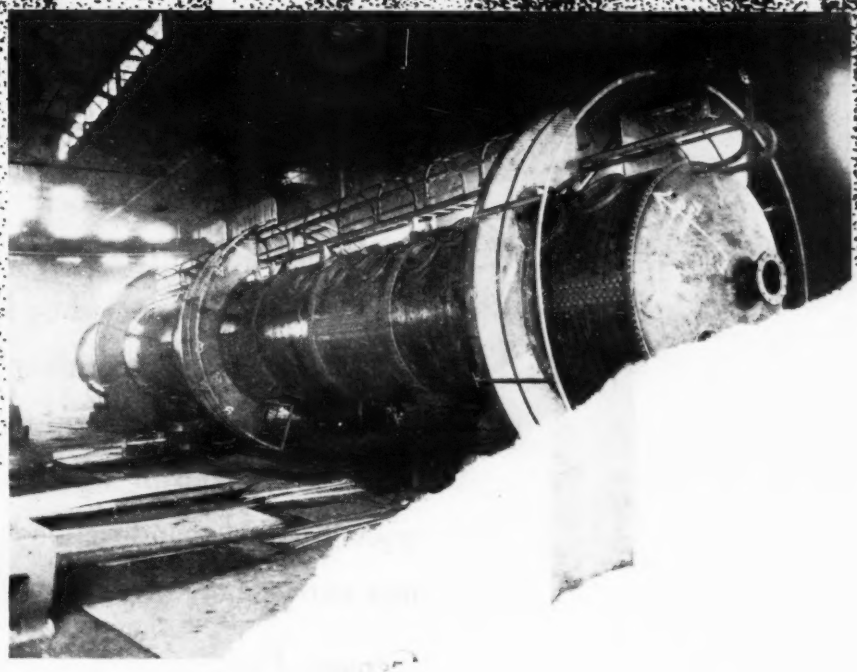
The seven old stills are equipped with six bubble towers. Crude oil is pumped through a heat exchanger countercurrent to the fuel oil leaving No. 7 still and enters No. 1 still at a temperature of about 250 F., the fuel oil having a temperature of about 650 F.

Vapors from No. 1 still pass into No. 1 bubble tower, a gasoline stream being taken off overhead. The rest of the gasoline is stripped from the crude in No. 2 and No. 3 stills, passing overhead from Towers 2 and 3. A kerosene distillate stream is taken overhead from Tower 4, a stove dis-



Flow sheet of new crude still hook-up at plant of White Oak Refining Co., Allen, Okla. Flow sheet by Winkler & Koch Engineering Co.

VAPOR COLUMNS



TULSA TYPE

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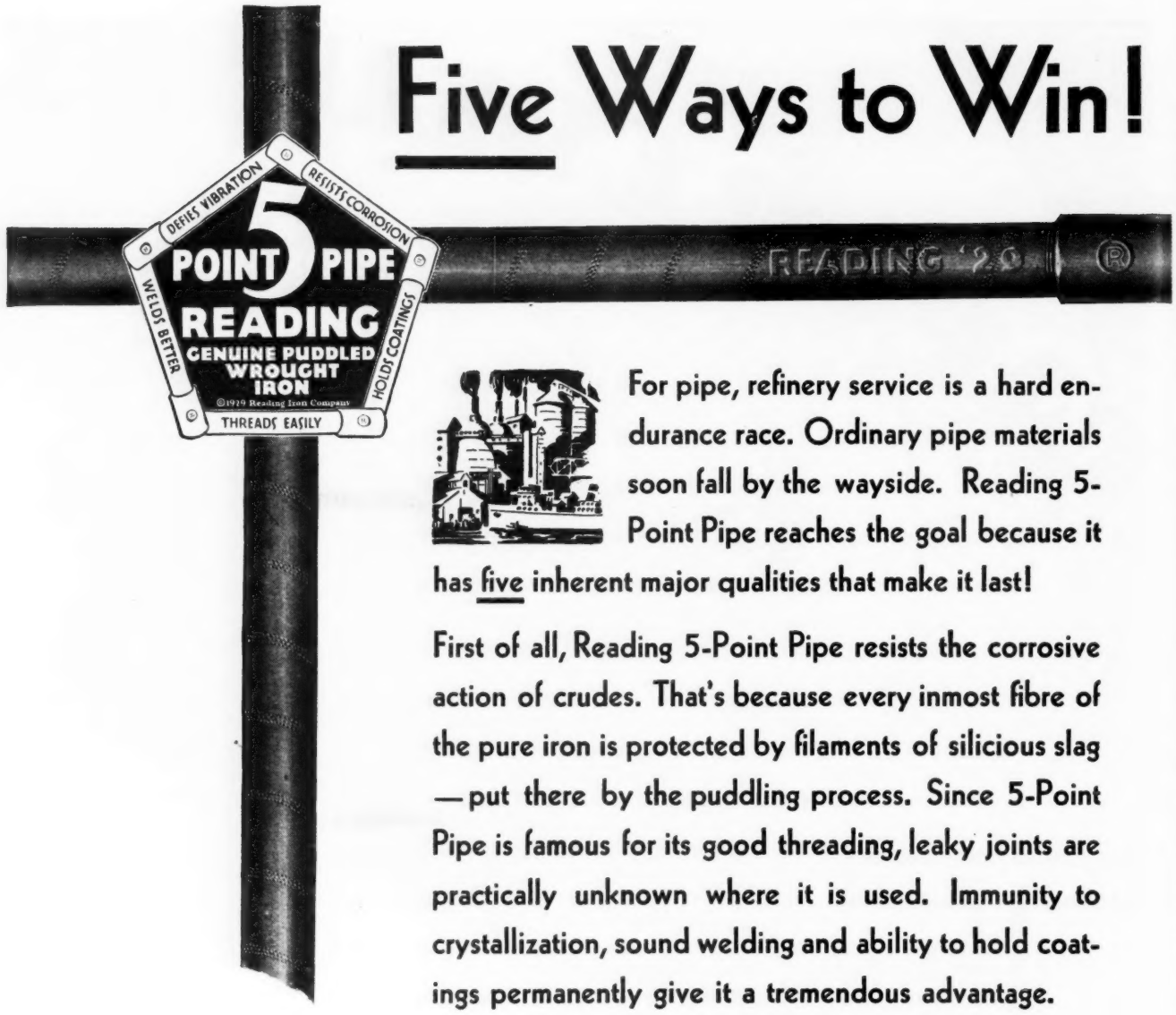

For pipe, refinery service is a hard endurance race. Ordinary pipe materials soon fall by the wayside. Reading 5-Point Pipe reaches the goal because it has five inherent major qualities that make it last!

First of all, Reading 5-Point Pipe resists the corrosive action of crudes. That's because every inmost fibre of the pure iron is protected by filaments of silicious slag —put there by the puddling process. Since 5-Point Pipe is famous for its good threading, leaky joints are practically unknown where it is used. Immunity to crystallization, sound welding and ability to hold coatings permanently give it a tremendous advantage.

Genuine Puddled Wrought Iron, made by the time-
rocess, and fully approved by the A. P. I.,
t place where all-around stamina is de-
length of Reading 5-Point Pipe is
ding name, date of manufacture
ark to protect you from untried

NG PIPE
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Los Angeles

tillate stream of about 38-40 gravity from the top of Tower 5 and a gas oil stream from the top of Tower 6. The vapors from the stills enter the towers of the corresponding numbers. The heavy ends from each of the towers are refluxed into their respective stills.

Still No. 7 has no tower, a gas oil stream passing overhead direct to the condenser and the fuel oil being continually drawn off the bottom through the heat exchanger to storage.

This plant is now recovering about 41 per cent of gasoline based on the crude. The Pure Oil Co., which sells some crude to the refinery, takes the entire output of gasoline. The kerosene, gas oil and fuel oil are marketed by the White Oak Refining Co. in tank cars locally or in any territory that the freight rate permits them to reach. The seven stills are now running about 2500 barrels of crude a day.

THE gasoline has a gravity of 60 A.P.I. or better and an end point of around 425. It is treated with sodium hypochlorite.

The company has two pipe lines of its own 25 miles long, which bring crude to the refinery from Sec. 16-8-6, Seminole field, and four 55,000-barrel tanks in the Seminole district, full of crude, purchased from the J. A. Hull Co.

One of the lines is 6-inch, of welded construction and has a crude capacity of 15,000 barrels a day. The other is a 3-inch and 4-inch screwed line, with a capacity of about 3500 barrels a day.

The new still battery was designed by the Winkler-Koch Engineering Co. of Wichita, Kans., and is an example of the wide range of possibilities that exists in designing refinery equipment to meet particular needs and conditions. The battery consists of seven 8 by 30-foot stills mounted in brick settings and equipped with four of the latest type bubble towers. The towers are each 6 feet in diameter and 68 feet high. Only 50 feet of the length is working tower, however, the structures being supported on steel skirts 18 feet high.

The stills are designed for oil firing and their furnaces are connected at the rear to a common flue 5 feet square which leads to a steel stack 5 feet in diameter and 150 feet high. While positive transfer of oil through the first four stills and towers of the system is provided for, the battery is piped at the front end so that the ordinary gravity transfer of the oil from still to still could be used if desired. While the battery is designed to run 6000 barrels of crude a day, it is believed it will easily be able to handle 7500 barrels. It is expected to run some Allen crude as well as Seminole when the stills are completed.

The accompanying flow sheet shows how the battery will operate.

Crude oil is pumped through a split line running over the tops of the four towers. A clover-leaf coil in the top of each tower is connected into this line and a portion of the crude passes through each of these coils. This serves a double purpose, heating up the crude and providing a "dry trim" for the tower to regulate temperature.

The amount of crude admitted to each of the coils is governed by a Tagliabue automatic control which is operated jointly by the level of oil in the still and the temperature at the top of the tower. After passing through the tower coils, the crude is returned into the lower pipe of the split line.

The two lines converge after the last tower has been passed and the stream of crude passes in series through two Griscom-Russell vapor to liquid heat exchangers and one liquid to liquid exchanger.

The crude, then at a temperature of about 350 to 365 F. is injected into No. 1 tower near the top. A stream of gasoline of about 100 initial and 375 end point is taken off the top of this tower and the heavier fractions are refluxed into No. 1 still which is lightly fired and from which additional vapors are driven off into the tower.

Stills 2 and 3 are connected and operated as a unit. A hot oil pump takes suction in still 1 and throws the bottoms into Tower 2. A naphtha stream of 300 initial and 400 end point is taken off the top of Tower 2. The heavy ends are refluxed into still 2 which is in free communication with still 3. Vapor lines from stills 2 and 3 lead the vapors into Tower 2 and another hot oil pump transfers the bottoms from still 3 into Tower 3.

REFLUX from Tower 3 is into still 4 from which vapors arise into Tower 3 and the bottoms from still 4 are injected into Tower 4 by a third hot oil pump. A naphtha stream of 375 initial and 440 end point is taken off Tower 3 and a kerosene distillate stream, 450 initial and 500 end point is taken off Tower No. 4. National Transit steam driven hot oil pumps are used.

The bottoms gravitate from still 5 into stills 6 and 7 which have no towers. Steam is used in stills 6 and 7 and a gas oil stream is taken off the top of each, the product having about 36 A.P.I. gravity from still 6 and about 32 gravity from still 7.

The fuel oil is continually pumped off the bottom of still 7 through the liquid heat exchanger where it heats

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For removing paint from storage tanks, tank cars, delivery trucks or oil drums, you will find nothing better than Oakite materials and methods.

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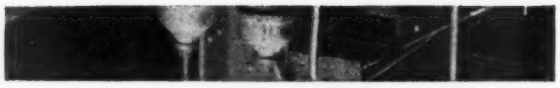

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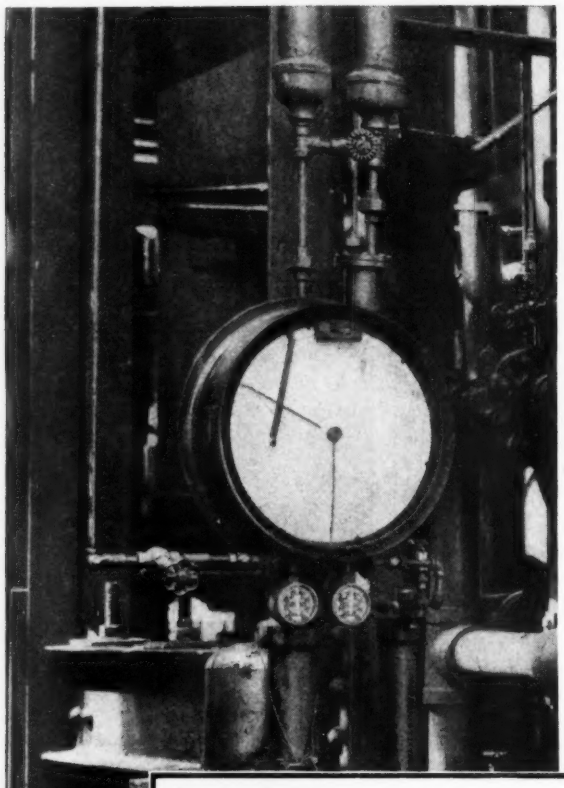


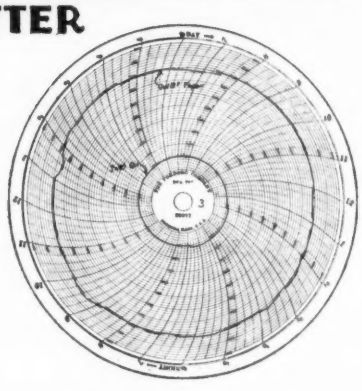
DO you want proof that Foxboro Rate of Flow Controllers will do the job for you we say they will? It's not hard to get. All through the oil industry these time-tested Instruments are accurately controlling the rate of flow of hot or cold oil, gasoline, sulphuric acid, caustic and other fluids. Talk with the nearest user.

Or look over a set of Foxboro "before and after" charts such as are illustrated at the left. They show plainer than words the difference between hand control and automatic control.

And here's the final proof. We will make a definite guarantee of what Foxboro Rate of Flow Controllers will do for you! All we ask is sufficient information to analyze the application. Give us the information covering the process or where you want uniform flow and we will give you the installation that will end your rate of flow troubles.

Put *guaranteed results* up to our nearest Branch. Write or wire for a Foxboro Engineer.

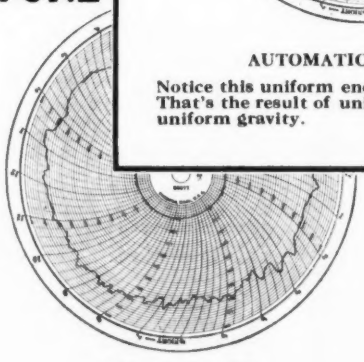
AFTER



AUTOMATIC CONTROL

Notice this uniform end temperature record. That's the result of uniform flow. It means uniform gravity.

BEFORE



HAND CONTROL

Note the continual changes in end temperatures on this Foxboro Chart. The result from uneven hand control of the flow of crude oil to the still. Automatic control saves money!

Foxboro Rate of Flow Controllers control and record distillation flow at Gulf Refining Co., Philadelphia, Pa., as shown above.

See our exhibit, American Natural Gas Convention, Kansas City, May 6-9, Booths 69 and 70.

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THE COMPASS OF INDUSTRY

INSTRUMENTS *for* CONTROLLING, RECORDING *and* INDICATING TEMPERATURE, FLOW, HUMIDITY *and* PRESSURE

incoming crude, before passing to storage.

The vapors from stills 6 and 7 on their way to the condenser pass through the two vapor to liquid heat exchangers to give up more heat to the crude on the way to No. 1 tower.

The injection of liquid and vapors from the stills into the towers in an open stream serves to provide a "wet trim" for the towers.

Each of the stills is connected at the rear with a tar pumping out line and each still is fitted with a tar plug. This is a round cast iron plug with a milled edge which seats snugly in a milled socket in the still bottom. The plug is attached to a long shaft which passes out through a stuffing box in the top of the still and terminates in a hand lever.

THE plug does not screw in. It is removed from its seat by a simple jerk on the lever, and can easily be replaced in position.

The purpose of the tar plug is twofold. If, when the bottoms are being pumped out of a still, a fitting failed, causing a fire, the plug could be instantly dropped into position and the flow cut off. If, on the other hand, a bad slug of water got into the still or for some other reason it was desirable to empty it in a hurry, the plug can be jerked out and the still rapidly drained or pumped out.

The stills in the battery are old pressure stills which were bought from the Producers & Refiners Corp. when that company dismantled a cracking battery at its West Tulsa refinery. The stills are very heavy in construction and are sound.

The plant was originally known as the Crystal White Refining Co. In May 1927, the North American Car Corp., a creditor, took it over at sheriff sale. This company sold it in August of the same year to W. M. Welch, formerly of the Tidal Refining Co., who formed the White Oak Refining Co. In March, 1928, a year ago, the Gulf States Terminal & Transport Co. Inc., bought the property from Mr. Welch.

Officers of the two companies are: Victor H. Smith, president; L. W. Pratt, vice-president, legal department; B. E. Conner, vice-president in charge of refinery and pipe line; W. G. Johnson, vice-president in charge of sales, D. N. Cleek, secretary; B. E. Robertson, general superintendent of the refinery.

Messrs. Smith, Pratt, Conner and Johnson are directors and additional directors are Frank M. Sowle, Exchange National Bank and Edgard Molitor of P. W. Chapman & Co. of New York. It is the Chapman firm that recently purchased U. S. Shipping Board ships for $16,000,000.

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Several hundred tons of Hybnickel are now in use in oil refinery stills and superheaters.

One of Our Main Products Is—
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Increase your gasoline yields,
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Reduce your refining costs.

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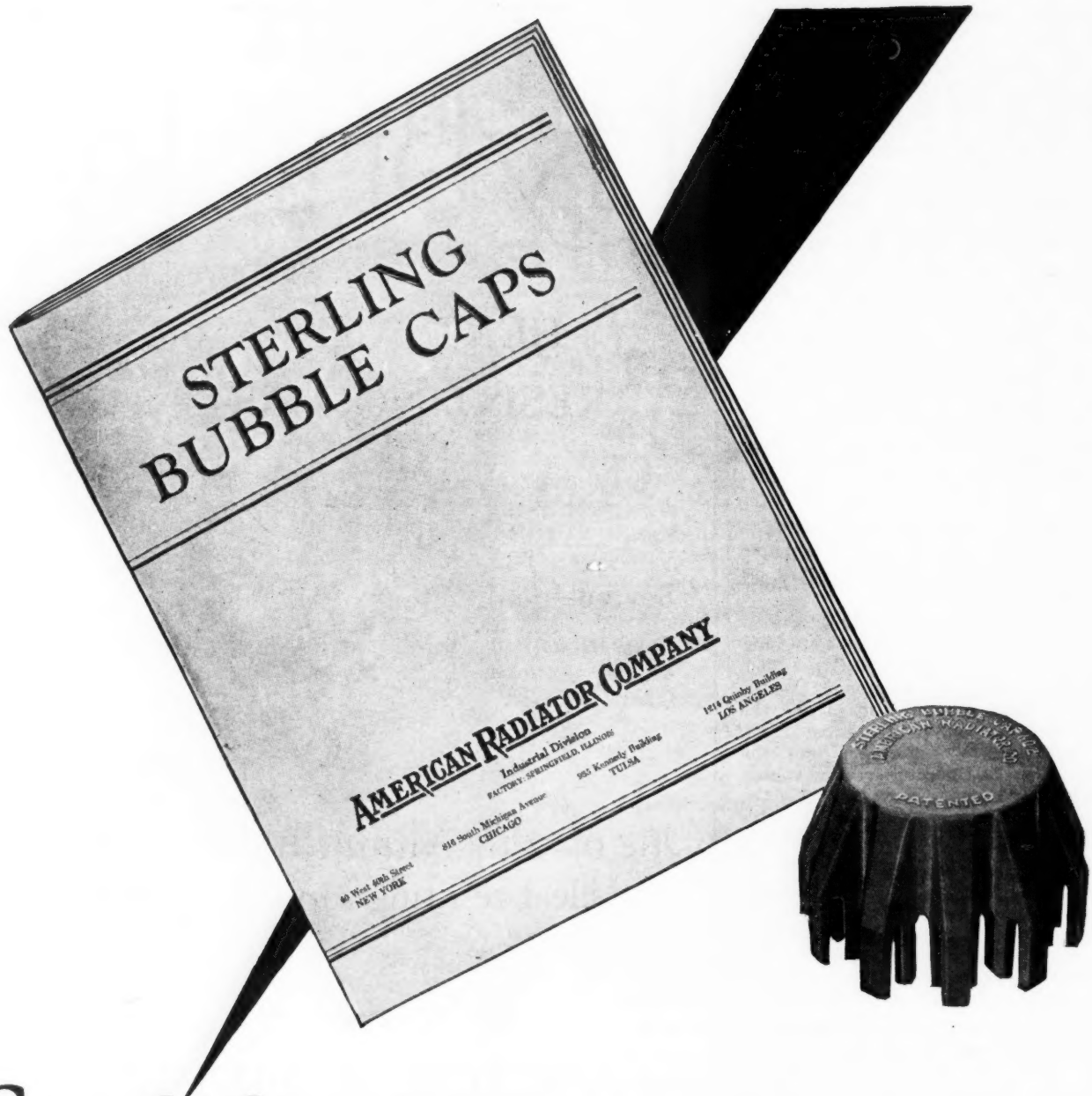

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The STERLING BUBBLE CAP is made of corrosion resisting ARCO METAL. It has high volumetric capacity with non-interlocking of bubbles. It has an orifice area of 18½ square inches and is made for 3½ inch O. D. vapor nipples and 7½ inch center spacing and weighs 11 pounds.

A 16 page book of interesting and valuable data on the Operation and Performance of STERLING BUBBLE CAPS sent free on request. This data is based on the performance of these Caps over a period of two years.

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LOS ANGELES

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

CORROSION troubles in connection with the refining of West Texas crudes seem less severe than was expected, according to some refinery managers who have had considerable experience with them. They say this is true of distillation at atmospheric pressure at any rate. It is found that crudes from most of the West Texas pools contain little or no salts and consequently hydrochloric acid corrosion is not a factor.

Corrosion from hydrogen sulfide can be kept down by carrying on operations at comparatively low temperatures, it is stated. Sulfur corrosion does not become severe until temperatures above 500 F. are reached, it is said. Corrosion is still enough of a problem to keep refiners on their toes, however, and cracking may bring other troubles.

* * * *

DR. SIDNEY BORN, assistant general superintendent of refineries of the Transcontinental Oil Co., with headquarters in Tulsa, did a good deal of research work on the characteristics of West Texas crudes when that section was new as an oil producer. The Transcontinental has large production in the Yates field of Pecos county and he wanted to know what they might expect when they began to charge the crude to their stills.

He called up the local representative of the Aluminum Co. of America and asked whether the company had any data as to the economy of using aluminum as a material of construction of refinery equipment where hydrogen sulfide was encountered.

The representative did not have any information on it but he asked permission to send five Aluminum company technologists to the Transcontinental's Fort Worth refinery to collaborate with Dr. Born and find out the truth about the matter. The permission was granted and the five technologists presently arrived.

In cooperation with the Transcontinental technologists, the aluminum experts put up two 1-barrel experimental stills. On one they hooked up a steel fractionating bubble tower with steel vapor lines and condenser coils and cast iron bubble caps. On the other they mounted a fractionating tower of pure aluminum with vapor lines, piping and so forth of the same metal.

Then they ran numerous tests to determine the comparative resistance to corrosion.

While their Fort Worth refinery is not running any West Texas crude, the experimental work done on the little still with the aluminum tower convinced the Transcontinental operating men that even aside from the question of corrosion, it would be profitable to use aluminum instead of cast iron bubble caps in fractionating towers they are building.

While the aluminum costs more per pound, its very light weight makes it cost less per cap than iron or steel, they point out. The average cast iron bubble cap is estimated to weigh about 8 pounds. An aluminum cap of the same size will weigh about a pound or a pound and a quarter.

If only the question of weight were involved, the balance would swing in favor of aluminum, in Dr. Born's opinion, because it would permit of much lighter tower construction where aluminum caps were used.

Technologists of the aluminum company are doing a large amount of exceedingly valuable research work on the practicability of using aluminum in the oil industry, not only in refineries but also for tops on crude storage tanks and so forth, where sulfurous oils must be stored.

* * * *

REFINERS who operate on Ranger crude almost invariably treat lubricating oils they make from it with sulfuric acid. This seems strange when it is considered that Ranger crude is very like Pennsylvania grade crude in that it is a paraffin base oil and in other characteristics.

No Pennsylvania refiner that I ever heard of uses any acid in treating his lubricating oils of any sort.

The question occurs, is it because the western refiners are more accustomed to using acid in treating that they continue the practice with Ranger lubes, and whether it really gives a better oil than merely filtering?

* * * *

WHETHER it is more economical to use contact filtering with fine clay or percolating filters with 30-60 mesh clay depends entirely on how much clay you have to use to the gallon of oil, in the experience of Dr. E. R. Lederer, vice president of the Texas Pacific Coal & Oil Co., Fort Worth.

Dr. Lederer, who has a refinery making low pour test lubricating oils from Ranger crude, declares that for his plant contact filtering is cheaper than percolating filtration would be and besides, the former gives a much better color. However, he states that the reason it is cheaper is that he has developed the technic of the process to such a point that he uses now only a small amount of clay per gallon of oil—in the neighborhood of a quarter of a pound—to give him the color he wants.

This as compared with something over a pound of clay to the gallon which seemed to be necessary when the plant was started up less than three years ago.

Exactly the same conditions would not apply to every oil. Some stocks would probably require more clay than others. Another factor that will be important in determining the economy of contact filtering as compared to percolation is the discovery of means for reclaiming the fine clay. A good deal of work is being done on this, but no definite progress has been reported so far as I have heard.

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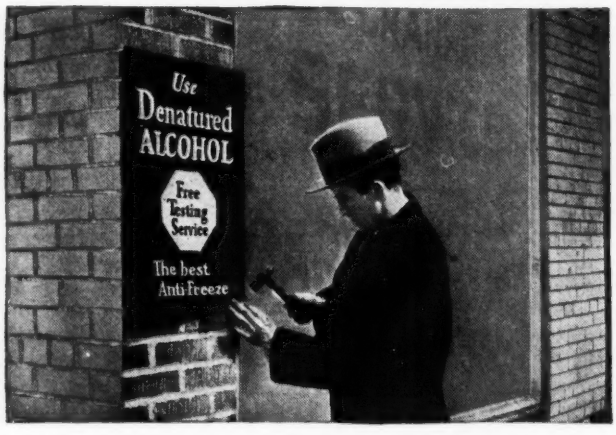
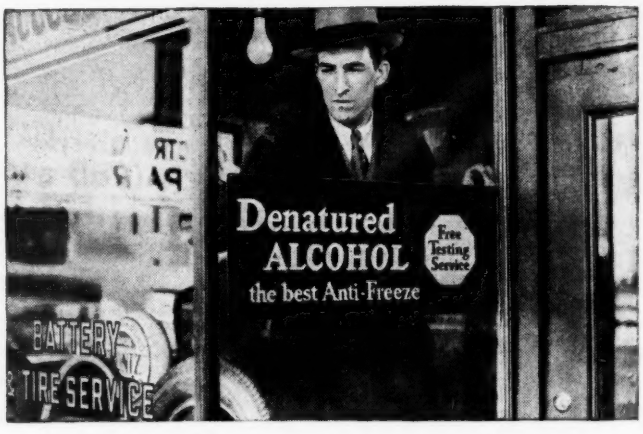
Denatured Alcohol Signs *Every Retail Outlet*

Dealers to be Supplied with



Our own representatives under direct supervision will install complete merchandising helps in every retail outlet in the cold area. No bother for the dealer.



Just before freezing temperature actually arrives these window streamers will go up to remind drivers of "the best anti-freeze"—Denatured Alcohol.

Radiator-charts that tell exactly how much Denatured Alcohol is needed for each make and model of automobile.

Dealers will be shown how to use this simplified, new Alco-Tester when motorists drive up for free testing service.

In this manual sales suggestions are given on how to increase profits by handling Denatured Alcohol.

DENATURED ALCOHOL

TIME IN THE INDUSTRY . . .

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OUT-DOOR SIGNS . . .
WINDOW STRIPS . . .
WALL SIGNS . . . . . .
RADIATOR CHARTS. .
SALES MANUALS . etc.

. . . well in Advance of the Winter Season . . .

Jobbers: tell your dealers to watch for one of these men. They bring material that ties each dealer up locally with the national advertising program. Over 200 trained men will call on the trade offering this service.

HERE'S real news for you! Real cooperation for jobbers who will get behind Denatured Alcohol this winter and *push!*

* * *

Last month we announced a smashing advertising-selling campaign for the 1929-30 season. A *bigger* and *better* campaign than ever before—a campaign that uses *every* form of advertising to sell Denatured Alcohol.

And now, as we go to press with this issue, we announce the completion of arrangements for a dealer service that is unparalleled in the history of Denatured Alcohol merchandising.

Last year we did an outstanding job of advertising! . . . . .

This year, you are going to have *double* newspaper advertising, *increased* magazine advertising, *stronger* radio advertising, *thousands* of poster boards, dealer helps . . . and a *trained* DEALER SERVICE ORGANIZATION.

They will actually install the outdoor signs, put up the window and wall streamers, tack up the radiator proportion charts and leave with the dealer a Denatured Alcohol Merchandising Manual.

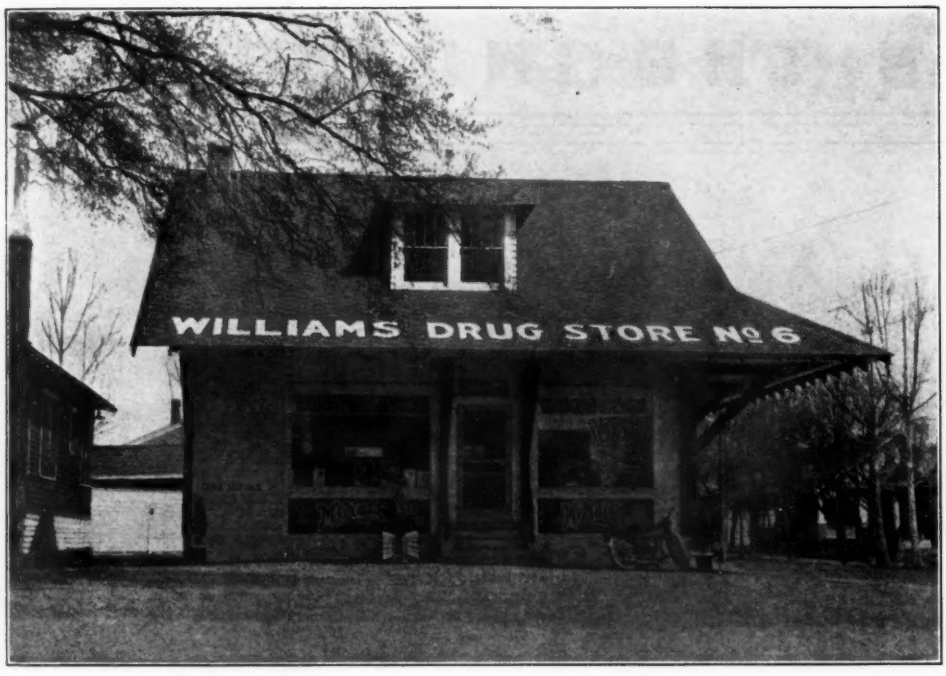
* * *

For the *first time in the industry,* Denatured Alcohol signs will go up on *every* retail outlet!

So get out your order book, Mr. Jobber. Your consumer advertising and dealer cooperation on Denatured Alcohol is "all set."

THE INDUSTRIAL ALCOHOL INSTITUTE, INC.
GRAYBAR BUILDING, NEW YORK CITY

THE BEST ANTI-FREEZE



A drive-in drug store in the South, which shows the influence of the automobile on retail merchandising

"Beating the Bushes" for Business Doubles Jobber's Volume

By Ward K. Halbert
N. P. N. STAFF WRITER

TUPELO, Miss.

WHEN the Independent Oil Co. of Tupelo, Miss., takes on a new dealer, the company's salesmen go immediately out into the neighborhood (town or country) near the dealer's place of business and build him up a gallonage. They never relent until the goods are sold to the ultimate consumer and the dealer is making money.

R. C. Clark, president of the company, says oil and gasoline left standing in the tanks of dealers is not profitably sold, so his men sell the company's products first to the dealer and then for the dealer, until the trade is established. The company doubled its gallonage in 1928 over 1927, largely by this method.

Picking out the best dealer customer in any community, concentrating on him, getting his business and clinching it so it will stay sold, is what Mr. Clark's salesmen call "beating the bushes" for business. But it has been so profitable thus far that they are all enthusiastic over it and are organized into an efficient team, each man having his own position to play.

Farther along in this article it will be explained why dealer business is so important in the south and especially in Mississippi, because it is not appreciated much over the country at large. But Mississippi is a single crop state where towns are not very numerous nor very large and the tenant system prevails on the plantations where much of the oil man's business originates.

This set of conditions makes the retail oil dealer in Mississippi singularly important. In character he is unlike the dealer of the north and middle west who is "mine today and yours tomorrow" and always ready to change products for a little better proposition. The southern merchant is proverbially slow to change lines so long as his customers are pleased with what he handles and he himself is well treated. Here is how Mr. Clark's men go after him:

Mr. Clark is the head of two companies. The Independent Oil Co., of Tupelo and the Lee County Oil Co., also of Tupelo. The latter company is a subsidiary engaged exclusively in the sale of lubricating oil. The two companies use the same warehouse but they do not handle the same products. Independent Oil Co. is a jobber and distributor of gasoline, kerosene, motor oils and greases.

It is a member of the Independent Oil Men of America, flys the flag of the spread eagle and sells Red Hat products throughout. Lee County Oil Co. handles cheaper oils than Red Hat; there is no secret about that detail. Mr. Clark stands behind the Lee County Oil Co. and its products but he is frank to say Red Hat is better than Lee County oil. Moreover he is ready to tell any customer how much better it is, and show it by laboratory test.

But Independent Oil Co. and Lee County Oil Co. both have two traveling salesmen. Each of the four men travels in a roadster with two drums of oil in the back end, but they do not peddle. They are regular "bang up" salesmen and whenever they sell a dealer something they are ready to stock him with the first consignment, then and there. These men, collectively, know who are the best dealers in that part of Mississippi, and they know why one dealer is better than another.

Naturally Mr. Clark wants every dealer to sell Red Hat products because they are better and they enable the dealer further to spread the Red Hat trade mark. But all cannot be sold on Red Hat. The hardest ones to sell are those that already are handling one high-priced, excel-

Are You Looking For Elbow-Room?

PENN-DRAKE

OILS

"Good for 1000 Miles or More"

Have they cut down your territory "for the sake of efficiency" after you've spent years building up a personal following?

Have you been told that you can do just as much business in one county as in three?

Are there indications of encroachment on your territory by refinery owned stations?

Are you ambitious to get going "on your own" with men who'll help you get business and keep it?

If questions like these are on your mind, it would be worth while to find out what you can do with a refiner of 100% pure

PENNSYLVANIA MOTOR OIL

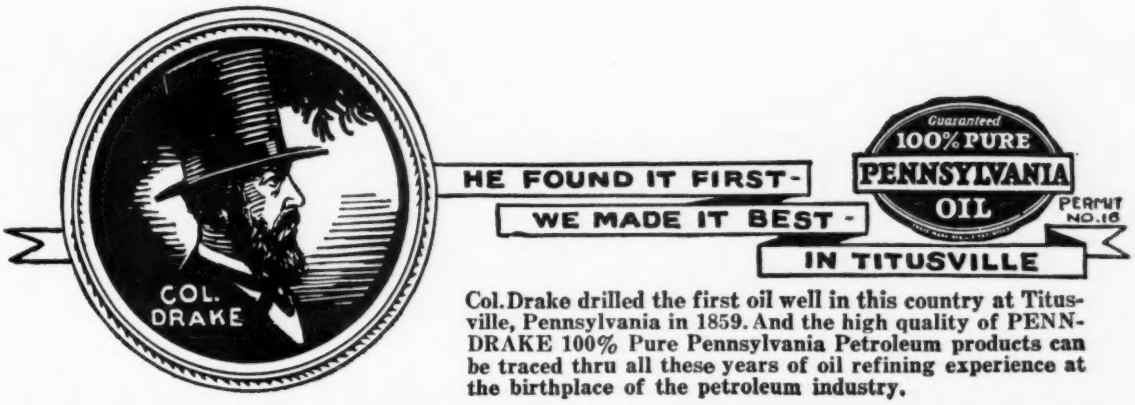
who seeks good distributors in open territories and who is prepared to help you tell the world what you have to sell.

And that's us.

Wire, write or come and see us.

The American Oil Works Co.

Titusville, Penn.



Col. Drake drilled the first oil well in this country at Titusville, Pennsylvania in 1859. And the high quality of PENN-DRAKE 100% Pure Pennsylvania Petroleum products can be traced thru all these years of oil refining experience at the birthplace of the petroleum industry.

A backwoods trading post in Mississippi. The front has been remodeled into the typical form expected of a gasoline service station

lent, oil and feel the need of a cheaper line. Even if they already have a cheap oil to sell they are less opposed to changing the cheap line than the good one.

That is where the Lee County oil fits into the picture. For an example: If a country store keeper is selling some famous gasoline and two brands of motor oil, Pennsylvania and Yellow Dog, he is a hard man to sell. He has two good products. nationally advertised. It may be hard to show him why he should change gasolines or why he should stock another quality oil, but he is likely to listen to reason with reference to the Yellow Dog oil which sells for 20 cents a quart.

The first move in selling such an individual is not an effort to replace the cheap oil with Lee County oil. That is only a last resort. The first effort is to get this dealer to handle every item of the Independent Oil Co.'s line. The first salesman who calls on him is an Independent Oil Co. salesman who concentrates on getting an Independent Oil Co. pump in front of the dealer's place.

The first salesman's line of approach is dignified. He boosts his products as equal to the best and his company as a home institution, deserving of the patronage of all local people who want the money they spend for oil and gasoline kept at home. A great many dealers are signed up on that basis, but not all.

If the first salesman fails to get the contract, he is followed in about three days by a second, also an Independent Oil Co. salesman. He does not approach the prospect as a strong-arm man who has come to do what the first salesman failed to do. He simply drops by the dealer's place "accidentally" so to speak. He always seems to be passing on his way somewhere else.

He revives all the sales arguments presented by the former visitor, emphasizes all the points made previously and brings up some more if he can think of them. His attitude toward the dealer is one of partial indifference because, after all, he is talking to his fellow salesman's prospect. He simply uses the personal element more, stressing the point that Independent Oil Co. is Dick Clark's company and Dick Clark is a Mississippi boy, an integral part of Tupelo.

But if the dealer is still unmoved, still satisfied with the treatment he has received from his present source of supply and still pleased with the products he is handling, and sees no reason why he should change, the company is not half through with him. He still has a lot to learn about how Mr. Clark's organization works.

IT IS more than a week, but not much more, when the third salesman calls. There is nothing accidental about the way he comes along. He approaches the prospect however from a different company entirely. He represents the Lee County Oil Co. and he has no gasoline to offer. He is a motor oil salesman and the burden of his proposition is "a quality oil that retails for a competitive price."

He proposes to supplant the Yellow Dog oil with something to sell at the same price, but something far better. If the dealer questions the statement and doubts it is better the salesman makes him a startling proposition. Here it is:

"Dr. W. F. Hand, down at the University of Mississippi is state chemist and head of the university's chemical department. He knows his oil. Let's leave it to him.

"You stock a drum of my oil. I will supply you with two sample bottles and a shipping package. You put samples of Yellow Dog oil and Lee County oil in the two bottles and mail them to Dr. Hand. I will pay the postage.

"When his report comes back, if it fails to show Lee County oil better than anything you have in the house but your 100 per cent pure Pennsylvania, we will give you the drum of oil. Otherwise you pay for it and sell it for what it is—a good oil."

The gambling proposition, the salesman's confidence in his goods, the hope to sell a better oil for an equal price, all are good sales material. Experience has proven that half the dealers who are offered that proposition accept it and order out a drum of oil.

But if that proposition fails, Mr. Clark has one more trump card. He reasons that the dealer in question is interested only in profits and cares nothing for quality. He takes it for granted that Yellow Dog oil must be a pretty rotten product and that the dealer must get it pretty cheap. And with that thought in mind he sends out Salesman No. 4, the last wave

Do you Know—how much Gum there is in your Gasoline?

Sure—it may be crystal white in the pump bowl—not show even a trace of gum—but a lot of things occur when gasoline is exploded in the motor.

The APPEARANCE of gasoline is absolutely no indication of its potential gum content. And yet, the gum in gasoline is the source of much motor trouble. Sticky valves, plugged gas screens, clogged carburetors—the entire category of ills that attend a sluggish car, loss of power, no pick-up or acceleration, are in a great measure due to the gum in gasoline.

True—when you look at gasoline, you may wonder where the gum is. But look at the two evaporation dishes shown below. Read the captions that explain them. One cannot help but wonder how much gum there is in five gallons of ordinary gasoline, if 20 c.c. leave such a definite quantity.

Here, again, PARCO shows its superiority. There's no mystery about its freedom from gum. It's simply a case of an exclusive refining process, (patents pending) perfected by our chemists, by which gum is removed. Consequently, PARCO will not show gum under any recognized gum test that we know of even after long storage.

Add to this freedom from gum, the other superior features of PARCO—*a highly cracked gasoline, guaranteed crystal white color, sweet odor, seasonal volatility, high anti-knock value*—and you know why PARCO is *The Premium Motor Fuel Without Premium Price.*

Call in our nearest Sales Agent.

Producers and Refiners Corporation

Independence Denver Chicago Tulsa Salt Lake City Memphis Omaha

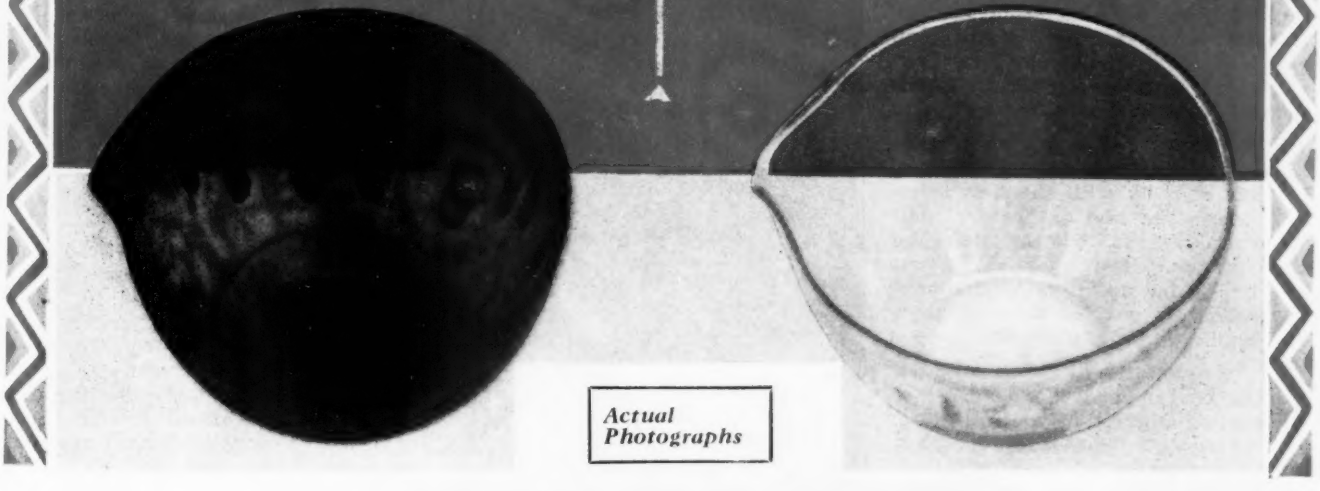
20 c. c. of ordinary

gasoline were tested in this beaker. Notice the serious gum deposit. Then look at the PARCO beaker.

20 c. c. of PARCO

were tested in this beaker. Notice the absence of even the slightest trace of gum.

PARCO shows no trace of gum under any recognized gum test, nor will it develop gum through long storage.



Actual Photographs

Our modern refinery at Parco was built to advantageously supply Northwest jobbers . . . . . Our refining facilities at West Tulsa and Blackwell mean advantageous freight rates for Southwest and Central States jobbers.

PARCO GASOLINE

The Premium Motor Fuel Without Premium Price

PARCO PETROLEUM PRODUCTS

of the attack. He goes out immediately—next day if possible.

Salesman No. 4 is a "kidder." He is the type of salesman that laughs his way into a prospect's good graces without any particular argument at all.

"Mr. Smith," he says, "We have got to do some business with you. If you just have to handle a product like Yellow Dog we want to supply it. You told our man yesterday that you were not interested in the quality unless the profit was there, so I have come to offer you one that involves both profit and quality.

"YOU give me a sample of that Yellow Dog oil and we will make you up an oil that meets every specification it has, and we will sell it to you for 3 cents a gallon less money. All we want is a sample of the oil and proof of what it costs you. I feel sure we can make you a better oil and sell it to you cheaper."

Experience has shown that 75 per cent of the dealers who decline the proposition of Salesman No. 3 will "fall for" the offer of Salesman No. 4. Of course Mr. Clark would not let Red Hat motor oil get mixed up in such a contest with Yellow Dog oil, but when Lee County Oil gets into a dealer's place of business it is an entering wedge for something better.

All the merchants who come in contact with Lee County Oil Co. and its comparatively unknown products, are aware that it belongs to R. C. Clark, at least in part. It has the same argument that Independent Oil Co. has, of being a home institution. And, in addition, it has the advantage of being very small. The salesmen themselves are part of the company's management. They can say "I" where the salesmen for Independent Oil Co. have to say "we."

It does not matter at what stage of the campaign a dealer is sold. He may sign up with the first salesman who visits him or he may wait for the last one, but he gets the same service. The salesmen go out and build him up a patronage anyway. That is part of the company's merchandising program.

As soon as the first drum of oil is delivered in a dealer's place of business, whether it be a rural store, a garage or a hot-dog stand the company concentrates all sales effort on that drum. Mr. Clark himself and all four salesmen proceed out to this man's neighborhood and "do their stuff." The idea is to move that oil and make the man understand that the company is with him and its help means something to him.

Early in the forenoon after the oil is delivered, Mr. Clark drives to the dealer's place of business and gets out of his car, enters the establishment and introduces himself. There is no "guff" or ostentation. Mr. Clark goes to express his appreciation of the new piece of business and his hopes that it will be mutually profitable.

The majority of these dealers are keepers of big country stores; department stores in fact but not in appearance. Most of them have been in business a long time. Some of them inherited the business from their fathers. Many of them are at least casual acquaintances of Mr. Clark's. It is easy for him to spend a half day there and he often does that very thing. Always there are mutual acquaintances and old times to talk about. Mississippi is still like that.

By the time the oil man has helped himself to a cold, bottled drink from the ice box and paid the clerk a nickel, some stranger has come in. After he has attended to his business Mr. Clark meets him, if he does not know him already, and begins to talk to him.

"I am Dick Clark in the oil business in Tupelo. Mr. Smith here has just stocked some of our oil and I want you to give it a trial. We have to depend on our friends and neighbors for what business we get," or some other remark like that.

And before the morning has passed Mr. Clark has talked to a great many customers. Sometimes he sells them several quarts of Mr. Smith's oil and puts it in their crank cases himself. Occasionally he drains a farmer's crank case and renews the oil for him. Oil on the hands does not matter in a case like that.

Albert R. Tattersall

Newly elected president of the Independent Oil Men's Association of New England

While Mr. Clark is at the store the four salesmen are out in the neighborhood. Each has an assigned region to cover. Each makes it a point to visit 20 acquaintances in that neighborhood that day. And when night comes, company representatives have interviewed between 80 and 100 oil users. That many motorists have been told that Mr. Smith is now handling Dick Clark's oil and they have been asked to trade with him. Within a week enough of them have done so to nearly empty the drum and Mr. Smith is ready for a second order.

Just at this point in the development of the account, one of two things is almost sure to happen. Either the dealer is sold solid and will order the second drum of oil, or he will "get his neck bowed" and refuse to do business with the company again. A certain percentage of the rural store keepers will jump at the conclusion that they have been handled with "strong arm tactics."

In the event the dealer gets hostile and resents the rapid-fire sales work, it is necessary to sell him over again. Mr. Clark or the salesman who called on him last has to visit him again and explain that the intention was good; that the company simply wants its products to move rapidly so the merchant can profit from the deal as well as the jobber.

Of course the 80-odd acquaintances whom the salesmen called on and asked to patronize Mr. Smith's store to get Lee County Oil Co.'s oil, are friends of the management. Many of them already have the habit of buying Independent Oil Co.'s gasoline occasionally. Part of them are sure to suggest to the new dealer that he augment his oil with Mr. Clark's main line, Red Hat gasoline and motor oil.

IF THE dealer heeds the requests of these customers he can hardly refuse to handle Red Hat products. But if he does fail to be converted he is subjected to one more solicitation. The Independent Oil Co. salesman who seemed to make the best impression (No. 1 or No. 2) is selected to go back a second time. If he has been impressed with the way the first drum of oil brought business, he is usually ready to listen to reason about Red Hat.

As soon as the dealer decides to handle Independent Oil Co.'s products, the real program of "beating the bushes" starts. The four salesmen go out and build him up a gallonage by house-to-house solicitation. This is usually done with quick interviews at farmhouses. The salesmen take their story of good oil products from a local institution straight to the consumer and ask each

MARATHON
PRODUCTS
"BEST IN THE LONG RUN"
REG. U.S. PAT. OFF.
DRUMS
New, strong, clean, sealed. Every gallon of MARATHON Motor Oil that is shipped from our refineries is filled in drums freshly painted with MARATHON green and ivory enamel paint, properly stenciled as to grade and S. A. E. specifications . . . . and sealed.
*Troxoil barrels are freshly painted blue with yellow heads. . . . . MARATHON Motor Oil is shipped in 55, 30 and 15 gallon drums; also 5 gallon tipper drums.
★ TROXOIL is a high grade motor oil made especially to meet competition. It can be sold as TROXOIL, or rebranded with the jobber's own brand name.
DIVISION OFFICES:
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Warehouses at convenient shipping points.
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Producers, Refiners, and Marketers of Marathon Quality Products
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QUALITY BUILT
LUBRI-KIT
TRADE MARK REGISTERED U.S. PATENT OFFICE
for Serving Lubricants
Muskegon, Michigan
Sells Oil in Drum Quantities to the Individual Car Owner
"Lubri-Kit" on permanent duty in private garages is inducing thousands of motorists to use more gallons of one brand of oil, with consequent greater profits for oil marketers. Model shown is an all-metal, precision-built Bennett product—9½" wide x 16" deep x 26" high over all, 16 gal. capacity; with all metal, locking handle pump; weatherproof, heavy cast, locking fill-opening cover; self-draining metal gauge stick with hooded handle that keeps out rain and dust. Low priced.
Finest Complete Outfit ever Designed for the HOME GARAGE
Write for Lubri-Kit Bulletin to Bennett Pumps Corp., Muskegon, Michigan, or Bennett Export Corp., 32 Broadway, New York.
ALL METAL
Model 215—16 Gal. Cap.
Model 227—27 Gal. Cap.
Write for LUBRI-KIT Bulletin
"Symbol of Quality"

one to trade with Mr. Smith, "your nearest merchant who has just begun to handle our oils and gasoline."

Even if Mr. Smith holds out past the fifth solicitation, still unwilling to change his source of supply on gasoline and his high priced motor oil, the house-to-house canvass is made anyway. The salesmen take their story to the motorists in the dealer's vicinity. They go to each house whether they know the occupant or not, and make him a short sales talk.

SOLICITORS are not resented in southern rural sections like they are in town. It is estimated that the average Mississippi farmer has three strangers a year to enter his yard gate trying to sell something. Most farmers are glad to listen to a few remarks in the interest of a line of goods obtainable from his neighborhood merchant. He does not mind sales talk if he is not asked to "shell out the cash" on the spot and pay for something.

Always on this last canvass, the salesmen ask the farmers to try the oil which Mr. Smith has stocked. They also ask the farmers to suggest to Mr. Smith that he put in Red Hat gasoline and motor oil for their convenience.

Certainly the sales talk made to each farmer is different as personalities differ. Besides, the solicitation made in one neighborhood is not like the one made in another, depending on the merchant and what part of the oil company's line he had begun to handle. The variations of that solicitation can be left to the reader's imagination. In general it amounts to asking the farm trade to buy a certain oil from a certain dealer. The request is made on a personal basis.

If the salesman happens to know the farmer it is not hard to reach a personal basis quickly. If he does not he has another chance. Independent Oil Co. is owned by a sizable group of well-known business men in Tupelo and Lee County. Every farmer in the county knows one or more of them. In telling him the company is a local institution the salesman always mention the owners names and the farmer will invariably make it known if one of them is his friend.

To oil jobbers in other sections of country, this type of sales work might seem literally extravagant and wasteful of time—high priced time at that. But that point brings up once more the peculiarity of Mississippi and other strictly agricultural regions. The truth is, that once a dealer in this country is sold he is sold permanently. It takes effort to change his mind and Mr. Clark thinks it is worth it to do so. Here is why:

The dealer is a big figure in the life of an oil business in Mississippi. Delivering gasoline and kerosene to the farmer's gate (bucketing it from tank truck to farmer's drum) is not a common practice in the south and it is almost unheard of in Mississippi.

The fact that the dealer is the entire outlet for gallonage in rural Mississippi makes him important. But rural dealers are rapidly growing scarcer. Current literature is full of accounts of how the automobile has killed the country school and the country church because country people drive to town now. The same situation has caused heavy casualty in country stores.

Little centers of business in farming regions everywhere that used to support four or five thriving stores have only one or two left. Numerous isolated merchantile establishments at cross roads are standing vacant. Only the best of country merchants seem able to weather the storm, and petroleum is one of the main departments of those country stores that remain.

General stores situated at points where such a business is justified; those good enough to compete with big-town stores on an equal footing, and those whose owners control considerable trade by their personalities, are the ones still in the competition. These are being solicited vigorously as dealers by the major oil companies.

Mr. Clark says only the good country merchants are worth having as dealers. He and his men concentrate only upon the merchant best fortified financially and in the confidence of the people about him. They pick the best on the theory that they are most likely to stay in business and that newcomers in the field of rural stores will be few and short-lived from now on.

THE more farmers buy automobiles the more country trade goes to town. This starves out the weaker country merchants but it builds up more gasoline and oil business for the strong merchants who remain, for farmers like city folk buy gasoline close to home. Now all country stores have gasoline pumps and many country merchants have remodeled their store fronts into drive-in filling stations.

Only a superficial survey of retail conditions in southern towns is enough to convince an observing person that walking is all out of fashion. Druggists, grocers and confectioners all cater to the public with curb service. Customers seldom get out of their cars. There is a chain of drive-in drug stores operating in the south. A picture of one of them accompanies this story.

Thus, the enterprising rural merchant who has remodeled his store front into a filling station, is right in the procession. He is giving the

most modern of service to his store customers. There are plenty to testify that such an arrangement has brought them new business almost immediately, and not all of them are in the south.

City filling stations can never take these merchants' trade away from them, at least not in Mississippi, because filling stations must sell for cash or brief terms of credit, while the country merchant handles everything "on fall terms."

The expression "fall terms" means that the merchant supplies the tenant farmer everything he needs all year on credit and the tenant pays in the fall when his cotton is sold. The land owner always places a limit on the credit of each of his tenants but he underwrites it for the merchant's protection. The landlords or the merchants or both are financed by the banks.

If the farmers could pay cash the store keepers would allow them a 10 per cent discount but tenants are perpetually in debt and regularly buy on "fall terms." About half of the tenants are negroes but every family has an automobile just the same.

Getting hold of this country store business has been the big factor in Mr. Clark's doubling his gallonage in 1928 over 1927. He had one more bulk plant in 1928 than in 1927 but that did not account for much over 20 per cent of the increase. He thinks joining the I.O.M.A. and participating in the sale of Red Hat products helped a great deal. He admits also that Tupelo, a town of 7500, has doubled its population in three years, but insists that the main factor in his 1928 success was vigorous merchandising through dealers.

Regulates Tank Wagon Deliveries

CLEVELAND, May 4.—The city of Phoenix, Ariz., has a city ordinance prohibiting tank wagons filling tanks of motor cars on the streets of the city. No other tanks may be filled except those that are approved by the city except underground storage at filling stations. The ordinance requires tank trucks to be equipped with static chains.

NEW YORK, May 3.—Keith Clevenger, director of information service for the Empire Companies, Bartlesville, Okla., a subsidiary of the H. L. Doherty Co., New York, June 1 will become director of publicity and advertising for the American Gas Association. Mr. Clevenger was formerly organizer and director of the public relations department of the United Light & Power, United Telephone and Associated Companies, Abilene, Kans. In June, 1913, he became director of public relations for the Cities Service Gas Co., Bartlesville, and in 1927 was made director of information.

Air capacity to suit you
One cubic foot—or 52

5% of AIR for Tire Inflation—Free. 95% On Which You Make A Profit.

The day has gone by when an installation of an air compressor can be considered an expense. Once you used it as an advertisement for your station and considered it a legitimate sort of expense. Now you buy Air Compressors for the profit you make out of them in engine cleaning, blowing out gas lines; cleaning, washing and painting cars, operating lifts, etc.

That is why you buy an all-purpose compressor when you buy any nowadays. You buy it to make money, so you should buy the greatest amount of service for your money. In other words

"DAYTON" AIR COMPRESSORS

Built in 29 sizes and types, ranging in capacity from 1 to 52 cubic feet.

ONE FOOT PER MINUTE UP TO 52

THIS IS A DAYTON "G"

A two-stage model built in 7 sizes, capacity ranging from 2¼ C. F. per minute to 10 C. F.

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by Ellis and Meigs, is a book which gives a complete survey of the field and a discription of practically every process of making gasoline and most other motor fuels of promise or prominence.

The price of the book is $10. Just send us your check and we will mail a copy of it to you.

National Petroleum News, 1213 W. Third St., Cleveland, Ohio

Fuel Oil Business Expands in South With Industrial Growth

By Ward K. Halbert
N. P. N. STAFF WRITER

JACKSON, Miss.

FURNACE oil is coming into its own in the south. With the industrial development going on in the southeastern quarter of the country, which has been on the decided increase since 1921, nearly every town with more than one railroad has been undergoing growth that might be called a "boom," without much exaggeration.

Industry has brought new people into the south with new needs and new ideas of construction. Modern office buildings and hotels are springing up in small towns now. They are not confined to the cities any longer and these new buildings are the "hot prospects" for fuel oil sales.

There are nine months of the year when people do not need heat in their offices, if they are south of Nashville, Tenn. In other words the fuel bill is not half what it is in a building of the same size in the region of the Great Lakes where a steam radiator has to be warm nearly nine months of the year. With the fuel bill cut from one-half to one-third what it is in the north, the property owners are more willing to consider a luxury fuel of a higher price.

It is true that apartment houses, hotels and office buildings must have hot water all summer, but that is more cheaply provided with an automatic oil burner than with a small coal burner, not big enough to justify a stoker.

In addition to a short season, oil has some other advantages in the south. Gas for industrial fuel is confined to big cities and high priced, and bituminous coal is used almost entirely.

Bituminous coal has proven a fairly easy competitor for the marketers of fuel oils. The growth of the fuel oil business is well illustrated in the record of E. H. Simpson, an Independent jobber of Jackson, Miss. He is the only jobber in town who is not identified intimately with some of the major, integrated companies. There are several retailers who buy in tank car lots but Mr. Simpson (strictly classified) is the only Independent jobber in town.

He has been in the oil business as a gasoline distributor since 1921 and only started distributing fuel oils in 1926 but his fuel oil volume was half as large as his gasoline volume during 1928. His total business exceeded a million gallons during 1928 and he declares that his field has not been worked thoroughly at all. In fact Mr. Simpson has just begun to give all his time to his oil business.

"I have had customers for years whom I never met until one month ago," Mr. Simpson said recently. "My oil business has been carried on as a side-line in a half-hearted sort of way. I have been operating an automobile sales agency in Jackson for a number of years but now I am out of the automobile business."

Since Mr. Simpson turned to his oil business as his principal vocation, he has been carrying on a complete renovation at the bulk plant. He has remodeled his warehouse and arranged for an office on the ground where he can direct the business personally. He has arranged to compound any grade of fuel oil a customer may desire from three stocked commodities, and has provided storage for cleaners and painters naphthas.

INCIDENTAL to his automobile business, Mr. Simpson arranged in 1921 to buy gasoline in tank car lots by purchasing a big tank from the U. S. Government—a salvaged army tank. In 1924 he augmented his line with kerosene and motor oils which necessitated building a warehouse.

In 1926 he started selling furnace oils and built up a surprising volume in spite of the fact that he charged a half-cent premium for distillate over any of his competitors.

The three products which Mr. Simpson buys for heating oils, are dehydrated, Smackover crude, distillate and gas oil. From these he is able to compound any fuel oil his customers in Jackson have ever asked him to deliver. He has never operated any filling stations and says a radical change of conditions will have to take place before he even considers entering the retail competition.

The most interesting feature of Mr. Simpson's bulk plant is his pump house that looks like the ruins of a departed civilization. It is of brick construction throughout, including the roof, and is about the size of a two-car garage. It was built in the early days of the Civil War as a powder magazine for the Confederate forces that made Jackson, Miss., the base of their operations.

Mr. Simpson admits that the time soon may come when the state's historical society will want the old structure preserved as a relic. In the meantime he is doing it no harm by the use he is making of it. It stands on property which he owns privately and is in a perfect state of preservation except for weathering which is most apparent on the outside.

The reason Mr. Simpson is so disinclined to enter the retail business in Jackson, is the dilapidated condition of the price structure. The town is literally infested with tank-car buyers. Some of them cut the retail price to the consuming public and the rest of them are prepared to do so any time their disturbing competitors make sufficient inroads into their volume.

The worst offender at present is a wholesale grocery company which operates an elaborate and attractive drive-in filling station, in the same manner that the Larkin Soap Co. operates in Buffalo, N. Y., and Peoria, Ill.

Fain Grocery Co. is the name of the Mississippi institution that follows the Larkin idea. It classifies as a wholesale dealer but makes sales to the retail trade at wholesale prices, so long as it is not necessary to break a package. Fain Grocery Co.'s retail gasoline price on the lot by the store is 20 cents a gallon while the official retail price in town is 22 cents.

THE Fain Grocery Co.'s competition has brought about a peculiar development in the gasoline market that exists nowhere else in the United States as far as the writer knows. Trucking gasoline from town to country trade involves an extra charge for the merchandise around Jackson, Miss.

The tank wagon price in Jackson is 18 cents a gallon, and the service station price is 22 cents. In the country surrounding Jackson the tank wagon price is 19 cents a gallon and the retail price 23 cents from rural wayside pumps. At least in one community in America, oil marketers take compensation for the operation of trucking gasoline to the country. The compensation is 1 cent a gallon.

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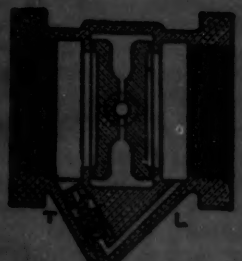

Cross Section Shows by-pass arrangement. Can be set at any desired pressures
Patent Pending

With a McDonald Relief Gate Valve installed at storage tank in your pipe lines, you have automatic, positive protection from the enormous pressures built up by expansion.

No unsightly overhead expansion lines are necessary. This valve has a special by-pass arrangement which permits the excess pressure in line to automatically equalize itself with that in tank. It is a doubly economical valve in that it replaces the ordinary storage tank valve and the extra overhead piping and in addition protects your pipe lines against all irregular pressures.

Made with the same sturdy construction as all McDonald Valves —in the regular rising stem or lock gate type, screw or flange. Write for further information.

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A. Y. McDONALD MFG. CO.

Omaha Minneapolis DUBUQUE, IOWA Des Moines Kansas City
Sioux City Lincoln *There's a McDonald Distributor Near You* Denver

McDONALD

Fire Protectionists Consider Service Station Ordinance

CLEVELAND, May 4

TWO sections pertaining specifically to service stations and drafted for inclusion in the suggested ordinance regulating the use, handling and sale of flammable liquids, will be submitted to the Flammable Liquids Committee of the National Fire Protection Association at the N. F. P. A. convention in Memphis May 16. The sections follow:

"81 Gasoline Gauging or Vending Devices.

"(a) All gasoline gauging or vending devices shall be of approved type and substantially secured to concrete or masonry foundations suitably located and of proper design and dimensions to normally prevent any portion of motor vehicle colliding with the device.

"(b) Systems, wherein continuous pressure is maintained on the gasoline storage tank in connection with gasoline gauging or vending device, shall be prohibited.

"(c) The use of above ground gasoline storage tanks in connection with gasoline gauging or vending devices shall be prohibited.

"(d) Devices which discharge by gravity shall be so designed that it is impossible to retain in the gauging compartment materially more than 10 gallons of liquid, and so that it is not possible to lock the device without draining the gauging compartment.

"82 Station Buildings, Equipment, Operation and Care.

"(a) Provision shall be made by grading driveway, raising door sills, or some equally effective means to prevent gasoline spills from flowing into interior of station buildings.

"(b) Electric motors and other spark emitting devices, when provided, shall be installed in a well ventilated room where no flammable liquids are stored or handled unless such devices are approved for use in explosive atmospheres.

"(c) Drainage from crank cases shall be kept in suitable closed metal containers.

"(d) In addition to 'NO SMOKING' signs previously required, 'STOP MOTOR WHILE FILLING' signs shall be prominently posted to be readily visible at points where gasoline is handled."

Included in the suggested ordinance for service stations are the following sections from the model ordinance regulating the use, handling and sale of flammable liquids, adopted in 1926: Sections 15, 16, 18, 27, 29, 30, 31, 38, 39, 40, 41, 42, 43, 44, 45, 46, 50, 52, 55, 56, except screens are not required in vent pipe, 60, 62, 63, 64 except that screen strainer is not required, 65, and 66 and 67 except that the exception pertaining to oil burning equipment shall not be included.

These sections, in brief, cover the method of getting a construction permit, inspection during building, liquid storage arrangements and limitations, extinguishers required, barrel and drum storage, lighting only by electricity, requirements for wheeled tanks, storage outside building and underground, nearness of storage to adjacent property, material and construction of underground tanks, venting, no connections with drains, gasoline piping must drain to tanks, leaky piping, filling pipe, deliveries to storage tanks, pumps required, and no gravity feed permitted.

The suggested ordinance has been published several times in pamphlet form, with the exception of the two new sections pertaining to service stations, by the N.F.P.A. whose executive offices are at 60 Batterymarch St., Boston.

Letters to the Editor

From a Prominent Oil Jobber

Dear Editor:

Your questionnaire of April 19 in reference to the marketing code of the American Petroleum Institute, which was filed pending the writer's return from a vacation, has just attracted my attention. I may be too late to serve any useful purpose but I should like to give vent, as a relatively small—if not still—voice, to our opinions as representative jobbers of the efforts being made to put over the "code of ethics."

Our company has never completely joined in the race for gallonage based on gift equipment. We have never paved drives or painted buildings. We have never cut prices to get gallonage. We pay no "rents." Our equipment loans have been held to a minimum. We have preferred to pass up mushroom gallonage dependent upon unprofitable concessions. We feel that we are almost pure enough in this respect to cast a first stone, and we want to cast it at several of our large and hypocritical friends, the major companies.

We know of no major company operating in this territory that lives up to this code or any other. Concessions range from actual price cuts, which the Sinclair winks at, to rental agreements by the Standard Oil Company of Indiana. We note a slightly diminished tendency to give equipment away but we see little evidence of any scrupulous adherence to the terms of the marketing code.

If we may judge by appearances, the effort to set up the marketing code is the work of the presidents of the major companies, and the sales managers of these companies have not been informed of the attempt. The time is not yet ripe, it would seem, for limitation of armaments: like our international naval conferences each participant subscribes to the movement with certain mental reservations.

The little fellow used to be the worst offender in making concessions, but the little fellows are bled white now and only the integrated companies appear to be able to continue prodigal sales tactics.

Yet it is the major companies that are sponsoring the code. Who are they trying to fool?

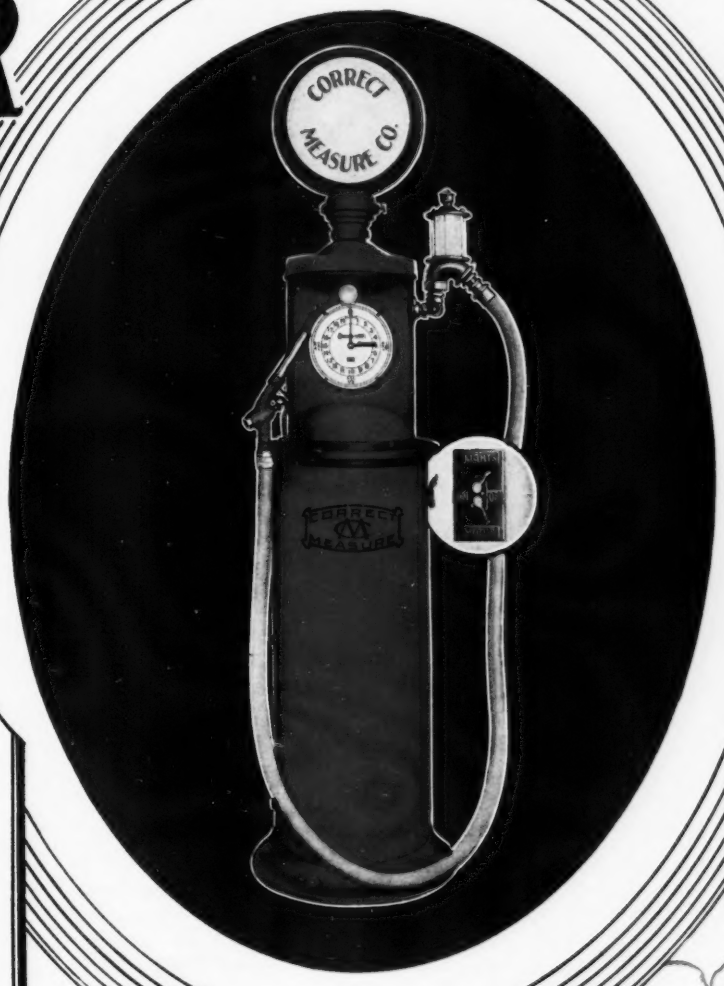
Seek Longer Time To Pay Freight

WASHINGTON, May 3.—Appearing for the American Petroleum Institute and the National Petroleum Association, Harry S. Elkins, of their Washington office has told the Interstate Commerce Commission that the rules of the railroads governing the collection of freight bills do not give the oil companies time enough in which to audit the bills. The result is an unnecessary lot of bookkeeping. Also those who fail to pay on time run the risk of being fined $5,000. Elkins said that a week should be allowed for the checking and paying of freight bills.

Under the law no railroad may surrender freight to a consignee except upon payment of the charges due unless, under rules prescribed by the commission credit is extended to shippers or receivers of freight. The commission has said that to persons of known financial responsibility a credit of 48 hours may be extended, without bond. In case of necessity, the rules provide that time for paying bills may be extended to 96 hours upon the furnishing of a proper surety bond.

The Shell Co., San Francisco; Skelly Oil Co.; Texas Co.; Phillips Petroleum Co., Bartlesville, Okla.; Waverly Oil Works Co.; Paragon Refining Co. and Tidioute Refining Co., Tidioute, Pa., for instance said the 48 hour period was entirely too short, particularly for companies who receive oil products at stations where the railroads do not have an agent or at stations far from the central offices of patrons.

O-METER



THE Correct-O-Meter is also built in electric and combination hand and electric models. Equipped with our own pumping unit, the electric model, shown at the right, leaves nothing wanting in efficiency, accuracy and fast service. All three models are the same in height and appearance and are equipped with large double dial, C-Flo and bell ringing attachment. Illustrated literature and complete information may be had on request.

The Electric model is priced at $168.00 F. O. B. Factory.

ROCHESTER - - - - PENNA.

Left to right: R. L. Kent, president, and George P. Nissen, vice president, Kent Oil Co., Salina, Kan.

Kansas Jobber Forms Finance Company To Sell On Cash Basis

By Allen S. James
N. P. N. STAFF WRITER

SALINA, Kan.

THE Kent Oil Co. of Salina, Kan., a jobbing company which virtually covers the northwestern quarter of Kansas and overlaps into Colorado, will operate in 1929 on a strictly cash basis!

To those of you who do not know the "cash and credit" problems of the Middle West, your first thought probably is: "Well, what of it—and why not?" To those of you who DO KNOW the Middle West your first reaction undoubtedly is the thought: "How can they do it—especially with such a large percentage of their business coming from farmers?"

The company is well under way on its cash basis program because of an idea which took root in the brain of R. L. (Rex) Kent, president, and which was developed into a feasible working plan by Mr. Kent, with the able assistance of his right hand assistant, George P. Nissen, vice-president of the company.

The plan was nothing more than the organization of a finance company. It had for its backbone the age old idea of the community banker loaning the farmer money in the spring with which to prepare the ground for seed and the taking of a note and a chattel mortgage for security. Mr. Kent carried the idea a step or two further, somewhat along the lines of the Morris Plan Bank and the General Motors Acceptance Corp. plans. Out of this mixture came the Farmers Finance Company of Salina.

The problem of credit to farmers has always been a big bugaboo to the successful operation of a jobbing company in the Middle West. Out in the grain belt the farmers have only one cash crop a year. The cash does not come in until after the harvest, and then most of it goes away immediately to pay debts. By spring the cash reserve of the average farmer is pitifully low. He must have his tractor fuel and oil, however, if he is to prepare and harvest another crop. Bankers as a rule will loan a farmer money for some of his necessities, but they have been reluctant to loan money with which to buy the fuel and oil. The banker's attitude has been to let the "rich" oil companies take the risk. The oil companies have taken the risk—many of them to their own sorrow!

Rex Kent and George Nissen grew up in Kansas. They have known the credit problems of the farmers for a long time. They have been face to face with these problems in their own business.

Four or five years ago when margins were wide Mr. Kent did not worry so much about losses on open accounts. The collections which were made left a profit sufficiently large for him not to grieve too greatly over the "slow ones."

The margin of profit the past two or three years has been steadily decreasing, while the cost of operating on a credit basis, at least for the Kent Oil Co. has been increasing.

Two years ago the Kent Oil Co. lost approximately $130,000 worth of business due largely to having to curtail credit sales with farmers. The company in 1928 did a credit business amounting to 50 per cent of its whole volume. The cost of doing that credit business last year was in excess of 11 per cent.

The weighted average margin of profit for the company in 1926 was 5.86 cents. The margin in 1927 was 4.68 cents, while in 1928 it was 3.56 cents.

NO WONDER Mr. Kent late in 1928 decided that if he was to continue in the oil business on a profitable basis, he would have to find some way to eliminate the large overhead occasioned by credits. The finance company was the outgrowth of his search for a way out.

The Farmers Finance Company was formed by a few friends of Mr. Kent after he had outlined his ideas to them. It was granted a charter by the Secretary of State. Its sole purpose is to finance farmers who cannot pay cash for their oil requirements. Whatever profit the company makes will come from its fee for handling the accounts and its ability to

collect notes secured by mortgages.

The finance company has for its field secretary a former banker who knows the Kansas farmer problems, who knows the value of the lands and crops and other chattel in that state. Who better than a banker understands the farmer's problems? Certainly not the oil company officials.

Organization of the finance company was perfected late in October, 1928. Although the season of heaviest demand for oils has just gotten under way the company on April 1 already had written contracts amounting to over $50,000, and the contracts were then coming in at the rate of $1,000 to $1,500 a day.

HERE'S the way the company operates:

Representatives of the Kent Oil Co. in soliciting the farmer's business offer a contract to supply the fuel and oil needs for the season. If the contracts meets with the approval of the farmer, he estimates the amount of goods he will need and signs a note for that amount, plus the finance company's handling charge, which is ¾ of 1 per cent per month, or 9 per cent per year.

This note is secured by a first mortgage on the crop, the farm machinery, live stocks and other chattels. The oil company salesman turns the signed note and mortgage into the oil company, who in turn gives it to the finance company. A field representative of the finance company checks up the items on the mortgage, looks up the records to see that the mortgage is a first and not a second or third mortgage, and if he finds the security ample and everything satisfactory, he puts his approval on the mortgage. The oil company then signs a contract to deliver during the duration of the note supplies not to exceed the amount of credit the finance company has approved. If the farmer does not take out goods to the full amount of his credit with the finance company, the oil company agrees to allow him credit for the unused portion. The note and mortgage are assignable, but not the contract.

When all the papers have been signed, the farmer is given one copy and the finance company retains the original, which is the note, attached to the mortgage and the contract signed by the oil company to make deliveries when requested by the farmer.

The farmer also is given a book of blank drafts on the Farmers Finance Company. A copy of one of these drafts is shown in Fig. No. 1. The inside cover of the pad of drafts is filled in with the information necessary regarding the contract. A copy of the cover is shown in Fig. No. 2.

When the farmer desires gasoline, kerosene or lubricating oils, he buys from the Kent Oil Co.'s tank wagon driver at the regular posted price. He fills out a draft for the amount of his purchase, and receives in return a cash sales ticket. The signed draft is turned in to the oil company by the tank wagon driver along with his cash and checks. The draft is taken to the finance company where it is immediately honored, and the credit the farmer has on the finance company books is debited for the amount of the draft.

One may wonder how the Kent Oil Co. can sell these contracts to the farmers. Yet there are two or three strong sales arguments. The most potent is the cash sales ticket the farmer receives when he fills in the draft.

When a farmer buys on an open account he receives no cash ticket which he can take to the county commissioners each quarter for the purpose of obtaining the state gasoline tax refund to which he is entitled when the oil has been used for agricultural purposes. When he buys under the contract he gets the cash ticket and is entitled to get each quarter a 3 cent a gallon refund.

Mr. Kent has estimated that not more than 5 per cent of the farmers in his territory obtain a refund because they have no statements to present to the county commissioners.

By way of example suppose a farmer estimates he will need $300 worth of fuel and oils during the year. He signs the note for $327, the $27 being the handling charge required by the finance company. The farmer in the course of the year will have to use only 900 gallons of gasoline for agricultural purposes for his refunds to pay the entire handling charge!

The writer was shown one contract for $436, and was told the farmer will use approximately 2700 gallons of gasoline during the term of the contract. With his cash sales tickets he will be entitled to a refund of $81. His handling charge for the contract will amount to $36. The farmer, therefore, will actually be ahead $45 by the time his note is due.

COULD there be any better sales argument that that?

Other sales arguments are those of convenience to the farmer and the assurance that he will get his supplies when needed, and will not run the risk of having his credit curtailed in mid-season because the oil company is short of cash and must of necessity cut down on all credits. He also is assured of no molestations from the oil company officials who might con-

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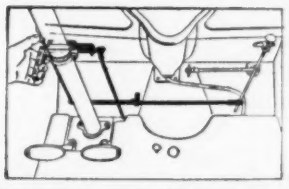
Here's Profit for You!
FINGER-TIP STARTER
For Model "A" and "AA" Fords



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LEAVES BOTH FEET FREE TO OPERATE BRAKE AND CLUTCH PEDALS

Easily installed Retails for $3.00

Dealers' Discounts

Lots of 6 or more - - - 50 per cent
Less than 6 - - - - - 40 per cent

Special: One sample for $1.50

MANUFACTURERS DISTRIBUTION AGENCY
Wholesale Distributors
1124 Harney St. - - Omaha, Nebr.

DATE

TICKET NO.

AMOUNT

AMOUNT FORWARDED

TOTAL TO DATE

The Farmers Finance Company

Salina, Kansas, _____ (DATE) 192__

PAY TO THE ORDER OF **The Kent Oil Company**

_____ $ _____

FOR MERCHANDISE DELIVERED TO ME BY THEM THIS DAY AND DATE AND CHARGE TO MY ACCOUNT.

TICKET NO. _____

To THE FARMERS FINANCE COMPANY,
SALINA, KANSAS

_____ (PURCHASER)

Draft signed by Kent Oil Co. customers when purchasing gasoline

stantly be seeking to "collect something on account."

The farmer, however, does not get all the benefits. The Kent Oil Company gets quite a few. Suppose we let Mr. Kent outline some of those benefits.

"The biggest benefit," Mr. Kent told the writer, "is the fact that the oil company will operate on a strictly cash basis. Our station business has been operated for some time on a commission basis with the operators paying their bills each week. Now we will have no open accounts. We will not have to be running after the farmers trying to collect. We will not have to be camped on his doorstep when he sells his crop, nor will we have to listen to his pleas for a further extension of credit because the grain market is low when he harvests and he wants to store his grain until a better market comes along. We will not have to be eternally after him, collecting a few dollars 'on account' whenever we can.

"When the draft is honored by the finance company our collection worries are over. The finance company has to worry about getting the money. If the farmer cannot give security sufficiently acceptable to the finance company, why should we run a risk by selling him on open account?

"The average farmer will think about paying an open account after he has paid more binding obligations. But when he knows there is a mortgage against his crop, his stock, his machinery or land, and it is held by a finance company, he is going to make every effort to meet that note when it falls due.

"An oil company could never accept such notes and then hard-heartedly move in and move out a farmer's possessions if he failed to make payments. But a finance company can and will move in on him. That's its business."

Mr. Kent expects the new plan to bring him 25 per cent more customers this year, and increase his business fully 25 per cent. In many instances farmers buying on open account will buy light oils from one company and lubricating oils from another. They sometimes will carry two or three accounts with different companies for the same supplies. Under the contract the farmer buys from the Kent Oil Co. his full requirements.

The plan perhaps is too new to tell how successful it will be. Most of the notes will not be due until late in the fall. Then the full story can be told. Mr. Kent told the writer, however, that the finance company had had three notes to come due since the company was formed, and he had been advised by finance company officials that in each instance the notes were paid in full on the date they were due.

Officials of the finance company handed the writer a stack of mortgages and invited him to look through them to see how well secured they were. One contract for $327, carried a mortgage on ¾ of the crop on 160 acres of land, 10 brood sows, and three or four pieces of farm machinery. The value of the property mortgaged was two or three times greater than the amount of the note, even in the event the crop should be blown away.

Another mortgage was on ¾ of the crop on 160 acres of land, and farm machinery conservatively valued at $1,500 to $2,000. The note was for $436.

Bruce B. Johnston
Of the law firm of Burry, Johnston, Teters & Dixon, who was recently elected a director of the Standard Oil Co. of Indiana, succeeding Dr. William M. Burton, resigned

---

ROCHESTER, N. Y., May 4.—Three of Rochester's pioneer oil marketers have been brought together in the recent merger of the Monroe County Oil Co., the Mutual Gasoline & Oil Corp., and the Union Oil Works. The merged companies will operate henceforth as the Monroe-Union Oil Corp., with headquarters here.

Frank J. Rohr, organizer and head of the Monroe company for many years, E. C. Freiling, head of the Mutual company, and Michael H. Shea, president of the Union, are the three old marketers who have joined forces.

It is understood that the Beacon Oil Co., Inc., Everett, Mass., refiner of the products which will be handled by the newly merged company, has a substantial interest in the Monroe-Union Oil Corp.

Fishing Tackle Is Profitable Side-line at Station

Staff Special

VICKSBURG, Miss.

ONE of the biggest service stations in Vicksburg stocks and sells a complete line of fishing tackle, a department which is at least singular and, in this case, decidedly profitable to the oil man.

The station is owned by George W. Miller, an automobile dealer in Vicksburg. The retail outlet is called the Clay Street Garage, and it IS a garage, but measures up completely to the standards of most establishments that are called "super service stations."

Mr. Miller buys his gasoline in tank car lots, having a bulk station some distance from the retail outlet. He unloads about 20,000 gallons of gasoline a month and 15,000 gallons pass through the Clay Street Garage. The one truck that serves the garage from the bulk plant also serves a few commercial accounts in town but never goes outside the city limits.

Mr. Miller boasts that he has no equipment out to dealers for he serves no dealers. All his customers who buy wholesale are big consumers, such as laundries and moving companies that operate good sized fleets of trucks.

The garage provides storage for 150 cars but is not any more important to the business than the drive-in service station which occupies the corner of the building at the intersection of Clay and Monroe streets. The establishment is all on one floor and occupies one-fourth of a large city block.

Besides the storage garage and gasoline and oil sales, the station has a department where complete lubrication is done in the most modern way. It also has an electrical department, complete with battery shop. And there is an automobile laundry at the back of the building. The tire department sells tires and does any kind of tire repair work.

The accessory store not only carries a line of ordinary accessories but also stocks and sells Ford and Dodge parts. A vending machine for cold drinks also has space in the sales room along with the parts and accessories, tires and tubes. But the most conspicuous exhibit is a glass showcase of fishing tackle, making nine separate departments.

H. L. Calvan, station manager, says fishermen all over the state know about the station's stock of tackle. It is not a cheap line by any means, but as good as any sportsman might want. The fishing lines in the showcase include 60-yard lines that sell for $5. Rods, reels, hooks, flys, minnows and corks are all in the same class of merchandise.

The fishing tackle stock is not heavy, ranging between $100 and $200 during the year. The management does not try to run the department for wide profit, buying everything they handle from a Vicksburg jobber. The idea in handling fishing tackle is to attract trade from the sportsmen who pass through Vicksburg in great numbers.

From the eastern and northern part of the state, fishermen motor to Vicksburg, knowing the Clay Street Garage will be open night and day, store their cars there, buy such items of equipment as their tackle boxes may need, and proceed by boat to their favorite fishing haunts. When they return their cars are fueled and lubricated and they are ready to start home—whether they stay on the river a day or a week.

New Stations Building

Note: Material used in this column is principally taken from newspapers. NATIONAL PETROLEUM NEWS assumes no responsibility for its accuracy.

Wheeling, W. Va.—South Penn Oil Co., filling station.
Atlantic, Ia.—George C. Hoegh, filling station.
Emmetsburg, Ia.—White Eagle Oil & Refining Co., bulk station.
Amasa, Mich.—Joe Golob, filling station.
Osage, Ia.—The Co-op Oil Co., filling station.
Boone, Ia.—Hudgel Bros. Oil Co., filling station.
Toronto, Ia.—August Willert, filling station.
Laurel, Mont.—Mr. Ebel, filling station.
Browns Valley, Minn.—Dr. Ewing, filling station.
Fayetteville, Tex.—Mr. Cordes, filling station.
Concordia, Kans.—Mr. Rhodes, filling station.
Goose Creek, Tex.—Magnolia Petroleum Co., filling station.
Wellington, Kans.—M. G. Pohlenz, filling station.
Des Moines, Ia.—Daniels Brothers Tire Co., filling station.
North Platte, Neb.—Mr. Woodgate, filling station.
Topeka, Kans.—Standard Oil Co., filling station.
Plainview, Tex.—Texas & Pacific Coal & Oil Co., filling station.
Calumet, Okla.—Stewart Palmer, filling station.
Knoxville, Tenn.—The Gulf Refining Co., filling station.
Fort Worth, Tex.—Mrs. J. E. McCarthy, filling station.
Houston, Tex.—Firestone Tire & Rubber Co., filling station.
Houston, Tex.—Humble Oil & Refining Co., filling station.
Springfield, Mo.—Lampe Burkenbeck filling station.
New Orleans, La.—New Orleans Public Service, Inc., filling station.
Macon, Ga.—Bibb Tire Co., filling station.
Fairmont, W. Va.—Freedom Oil Co., filling station.
Orlando, Fla.—Ernest Tiedtke, filling station.
Atlanta, Ga.—E. O. Denton, filling station.

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Cleveland, Ohio

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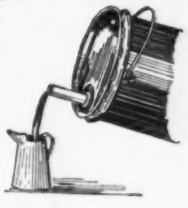
After it is empty and the cover removed, a Por-Pail finds dozens of uses about the farm, home, or garage—that is why city people as well as farmers prefer to buy oil that comes in the Por-Pail. Why not make *your* oil preferred? Let us send you the details.



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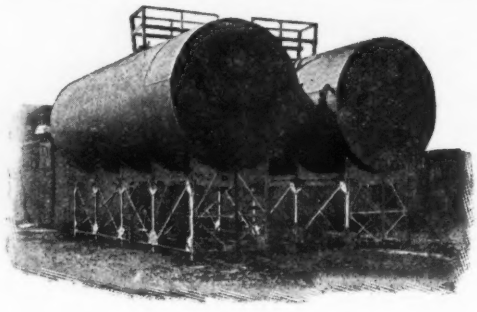

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Measuring Tanks

Underground Tanks

Pumps

Pressure Tanks

Faucets and Hose, and

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COLUMBIAN STEEL TANK COMPANY

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Austin, Tex.—R. W. Shipp, filling station.
Savannah, Ga.—Daniel J. O'Connor, filling station.
Savannah, Ga.—Standard Oil Co., filling station.
Houston, Tex.—John Wharvel, filling station.
Denbigh, Va.—J. W. Hoopes, filling station.
Wellington, Kans.—The Phillips Petroleum Corp., filling station.
Independence, Mo.—Lee Roberts, filling station.
Lone Tree, Ia.—J. A. Dusterhoft and Hearst Riggs, filling station.
Salina, Kans.—Skelly Oil Co., filling station.
Davenport, Ia.—Elrey Rehbehn, filling station.
Wheeling, W. Va.—South Penn Oil Co., filling station.
Frederick, Okla.—J. R. Adkins, filling station.
St. Joseph, Mo.—Beckley Brothers, filling station.
Del Rio, Tex.—Dick Owen, filling station.
Boonville, Mo.—John Gantner, filling station.
Decatur, Tex.—Douglass & Burton, filling station.
Mission, Tex.—J. H. Marcell, filling station.
Shawnee, Okla.—M. L. Welsh, filling station.
Columbia, Mo.—Boone County Oil Co., filling station.
Kansas City, Kans.—G. B. Little, filling station.
Pawhuska, Okla.—J. B. Rubenson, filling station.
Topeka, Kans.—Standard Oil Co., filling station.
Boonville, Mo.—Shell Petroleum Co., filling station.
Osage, Ia.—Co-op Oil Co., filling station.
Albuquerque, N. Mex.—The Texas Co., filling station.
Langdon, N. D.—Charles & Burt Ellis, filling station.
Moberly, Mo.—The Mississippi Gas & Oil Co., filling station.
Flat Rock, O.—George Zechman, filling station.
La Salle, Ill.—The Texas Co., filling station.
Hays City, Kans.—E. W. Mann, filling station.
Clinton, Ia.—Triangle Oil Co., filling station.
Spirit Lake—The Mona Motor Co., filling station.
Churchs Ferry, N. D.—Lake Oil Co., filling station.
Independence, Kans.—Shell Petroleum Corp., bulk station.
Washington, C. H., O.—The Refiners Oil Co., filling station.
Swanville, Minn.—The Standard Oil Co., filling station.
Washington, C. H., O—The Shell Oil Co., filling station.
Armour, S. D.—Jasper DeGeest and Carl H. Schroeder, filling station.
St. Cloud, Minn.—Louis Schaefer, filling station.
Grand Forks, N. D.—E. J. Lander & Co., filling station.
Billings, Mont.—Yale Oil Corp., filling station.
Minneapolis, Minn.—W. C. Williams, filling station.
Madison, Ind.—Stoll Oil Refining Co., service station.

Tieman New Reed Plant Manager

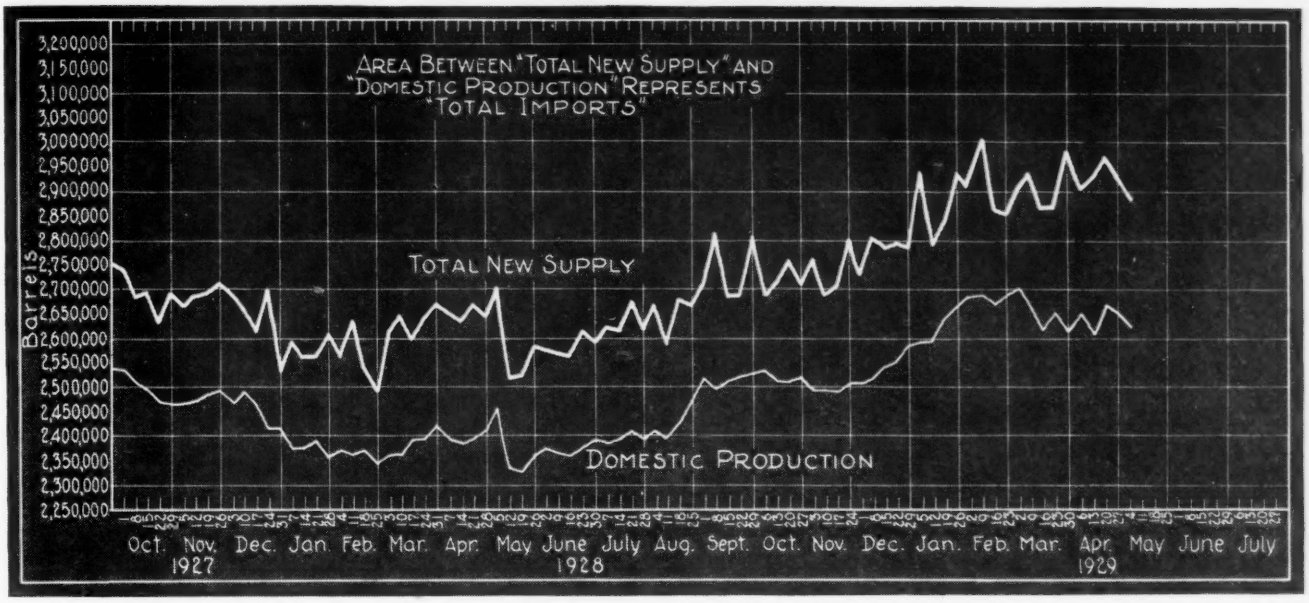
HOUSTON, May 4.—Fred Tieman, who recently joined the Reed Roller Bit Co. organization, has been placed in charge of the new plant at Lake Charles. This new plant was built for further servicing of Barrett-Robishaw Drilling-Core Bits and other equipment handled in that territory.

New Gas Line in Texas

NEW YORK, May 4.—The United Gas Co. has let a contract to the United Gas Engineering Co. for the construction of a gas line from the Refugio fields to Austin and San Antonio. The line will consist of 110 miles of 16-inch pipe capable of delivering 60,000,000 cubic feet per day. The line will cost $2,750,000. It will be completed by July 15.

On May 1 "double track" service over the transcontinental air line began for Cleveland and Toledo, enabling air mail and express planes to make two through-trips between the coasts every 24 hours, according to National Air Transport, Inc., Chicago.

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	May 4	April 27
Production east of Rockies	1,878,650	1,862,950
Increase		15,700
Total production in U. S.	2,629,850	2,650,650
Decrease		20,800
Crude oil imports	256,000	287,428
Decrease		31,428
Total crude supply	2,885,850	2,938,078
Decrease		52,228

OKLAHOMA

	May 4	Apr. 27
Allen Dome	25,700	25,750
Blackwell	3,900	3,950
Bowlegs	34,450	32,950
Braman	3,400	3,400
Bristow-Slick	19,600	19,650
Burbank	20,850	20,950
Cromwell	7,900	7,900
Cushing	20,550	20,600
Davenport	1,500	1,500
Duncan District	6,500	6,450
Earlsboro	63,050	60,200
Fox	1,450	1,450
Garber	5,500	5,550
Braham	4,200	4,250
Healdton	13,000	13,050
Hewitt	8,100	8,100
Hubbard	2,000	2,000
Little River	78,250	72,350
Logan County	10,800	10,900
Maud	28,650	28,900
Mission	31,950	30,300
North Okmulgee	13,650	13,700
Oklahoma City	3,100	3,250
Osage (outside Burbank)	24,800	24,850
Papoose	3,350	3,350
Pearson	2,000	2,200
St. Louis	99,250	99,750
Scholem-Alechem	12,900	12,950
Searight	11,900	11,550
Seminole	33,700	32,350
South Okmulgee	7,850	7,900
Thomas	800	800
Tonkawa	10,450	10,400
Wewoka	4,900	4,900
Yale-Jennings	7,050	7,100
Others	49,100	48,100
Total, Oklahoma	676,100	663,300
Increase		12,800

KANSAS

Augusta-Fox Bush	2,950	2,950
Churchill	6,700	6,900
Eldorado-Towanda	12,700	12,750
Florence-Covert	1,000	1,000
Greenwood County	20,150	20,100
Oxford	5,050	5,050
Peabody-Elbing	2,750	2,750
Rainbow Bend	1,000	1,000
Russell	3,250	3,300
Sedgwick County	28,400	26,250
Others	27,700	27,800
Total, Kansas	111,650	109,850
Increase		1,800

NORTH LOUISIANA

Bellevue	700	700
Caddo, light	8,250	8,200
Caddo, heavy	3,200	3,250
Cotton Valley	3,000	3,000
De Soto and Red River	3,900	3,900
Elm Grove	600	550
Haynesville	5,350	5,350
Homer	4,000	4,050
Pleasant Hill	450	500
Urania	5,750	5,900
Others	250	250
Total, North Louisiana	35,450	35,650
Decrease		200

ARKANSAS

Champagnolle	8,850	8,650
Eldorado	4,700	4,700
Lisbon	1,350	1,350
Nevada	1,200	1,200
Smackover, light	6,200	6,200
Smackover, heavy	49,100	49,100
Stephens	1,050	1,000
Others	100	100
Total, Arkansas	72,550	72,300
Increase		200

TEXAS (Outside Gulf Coast)

Panhandle District

Carson County	6,800	6,550
Gray County	25,400	25,800
Hutchinson County	25,700	25,150
Wheeler County	650	650
Others	1,800	1,850
Total, Panhandle Texas	60,350	60,000
Increase		350

North Texas

Archer County	16,450	16,700
Burkburnett	8,800	8,950
Electra	12,500	12,700
Iowa Park and K. M. A.	5,450	5,300
Montague-Cooke	13,150	13,000
Wilbarger	27,300	27,250
Others	500	500
Total, North Texas	84,150	84,400
Decrease		250

West Central Texas

Brown County	8,250	8,400
Callahan County	4,100	4,000
Coleman County	3,500	3,600
Eastland-Desdemona	6,200	6,500
Jack County	1,800	1,950
Palo Pinto County	400	400
Shackelford County	13,000	13,200
Stephens County	6,200	6,300
Throckmorton County	600	700
Young County	6,600	6,750
Others	700	700
Total, West Central Texas	51,250	52,500
Decrease		1,250

West Texas

	May 4	April 27
Crane and Upton Counties	47,000	47,600
Crockett County	2,100	2,200
Howard County	45,000	46,350
Jones County	5,200	5,650
Mitchell and Scurry Counties	2,600	2,750
Pecos County	87,600	88,500
Reagan County	18,500	18,800
Winkler County	143,000	144,150
Others	2,100	2,200
Total, West Texas	353,100	358,200
Decrease		5,100

East Central Texas

Boggy Creek	2,800	2,800
Corsicana-Powell	7,950	8,000
Currie	500	500
Mexia	5,150	5,300
Nigger Creek	600	600
Richland	400	400
Wortham	1,000	1,100
Total, East Central Texas	18,400	18,700
Decrease		300

Southwest Texas

Dale	500	500
Laredo District	11,800	11,950
Luling	11,900	12,000
Lytton Springs	1,000	1,000
Salt Flat	40,900	40,450
Somerset	1,450	1,300
Others	4,250	*4,550
Total, Southwest Texas	71,800	71,750
Increase		50
Total, Texas (Outside Gulf Coast)	639,050	645,550

*Revised.

GULF COAST

Coastal Texas

Barbers Hill	8,850	9,450
Batson	1,500	1,500
Big Creek	2,700	2,900
Blue Ridge	4,250	4,000
Boling	1,900	2,000
Damon Mound	700	700
Goose Creek	6,100	6,100
Hull	9,000	9,100
Humble	11,700	7,400
Orange County	3,100	2,950
Pierce Junction	20,100	21,100
Raccoon Bend	3,500	3,650
Saratoga	1,000	1,000
Somerville	3,000	2,900
Sour Lake	2,700	2,700
South Liberty	5,400	5,400
Spindletop	31,200	32,600
Sugarland	12,400	11,000
West Columbia	6,400	6,500
Others	4,350	4,650
Total, Coastal Texas	139,850	137,600
Increase		2,250

Coastal Louisiana

East Hackberry	2,800	2,650
Edgerly	850	800
Evangeline	900	800
Lockport	4,000	4,200
Old Hackberry	3,700	4,300
Sorrento Dome	400	350
Sulfur Dome	2,900	3,300
Sweet Lake	400	400
Vinton	4,000	4,100
Others	750	750
Total, Coastal Louisiana	20,700	21,650
Decrease		950
Total Gulf Coast	160,550	159,250

ROCKY MOUNTAIN

Wyoming

Big Muddy	2,350	2,400
Elk Basin	850	800
Grass Creek	2,150	2,250
Labarge	1,800	1,800
Lance Creek	300	250
Lost Soldier	3,300	3,300
Oregon Basin	2,350	2,350
Rock Creek	2,500	2,500
Salt Creek	33,600	27,150
Others	3,700	3,350
Total, Wyoming	52,900	46,150
Increased		5,750

Montana

Cat Creek	1,400	1,400
Pondera	2,450	3,000
Sunburst	6,500	6,500
Others	100	100
Total, Montana	10,450	11,000
Decrease		550

Colorado

	May 4	April 27
Florence	900	1,050
Fort Collins	2,500	2,450
Moffat (Craig)	1,150	950
Others	1,750	1,800
Total, Colorado	6,300	6,250
Increase		50

New Mexico

Artesia	900	900
Hogback	250	250
Rattlesnake	.....	850
Table Mesa	.....	.....
Others	400	400
Total, New Mexico	1,550	2,400
Decrease		850
Total, Rocky Mountain	71,200	65,800

CALIFORNIA

	May 4	April 27
Dominguez	10,300	10,500
Elwood-Goleta	30,000	35,000
Huntington Beach	42,000	44,000
Inglewood	22,500	23,500
Kettleman Hills	3,500	3,500
Long Beach	175,000	180,000
Midway-Sunset	72,500	72,500
Rosecrans	6,400	6,700
Santa Fe Springs	160,000	170,000
Seal Beach	36,000	41,000
Torrance	13,500	14,000
Ventura Avenue	54,000	56,500
Others	125,500	130,500
Total, California	751,200	787,700
Decrease		36,500

EASTERN

(Including Ill., Ind., Ky., Ohio, W. Va., Pa., and N. Y.)	.....	111,250

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended May 3 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended May 3
Plants Reporting	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)	92,000	160,200	86,600	81,500	54,900	475,200
Da. Cracking Capacity	30,700	52,600	17,200	.....	22,700	123,200
Da. Av. Crude Runs	62,452 — 1.7	106,203 — 4.9	63,721 + 8.9	54,852 + 2.1	64,498 + 2.6	351,726 + 0.4
Da. Av. Other Oils	7,791 + 12.0	8,182 +155.0	1,402 + 41.9	..... —100.0	2,854 + 6.7	20,229 + 46.0
GASOLINE—Gallons						
Stocks, April 26	31,289,000	75,420,000	20,860,000	7,427,000	8,036,000	143,032,000
Prod. 4-26 to 5-3	9,595,000 + 5.0	17,132,000 — 8.9	7,556,000 + 7.4	4,119,000 + 3.2	6,441,000 + 8.8	44,843,000 — 0.1
Ship. 4-26 to 5-3	9,242,000 + 0.3	17,842,000 + 3.5	10,046,000 + 27.7	4,052,000 — 1.6	5,456,000 — 12.1	46,638,000 + 4.4
Stocks, May 3	31,642,000 + 1.1	74,710,000 — 0.9	18,370,000 — 11.9	7,494,000 + 0.9	9,021,000 + 12.3	141,237,000 — 1.3
Ratio Sales to Prod.	96.3%	104.1%	133.0%	98.4%	84.7%	104.0%
KEROSENE—Gallons						
Stocks, April 26	6,635,000	7,231,000	2,401,000	65,000	654,000	16,986,000
Prod. 4-26 to 5-3	2,158,000 — 6.1	1,985,000 — 8.3	1,632,000 + 8.9	11,000 +266.7	480,000 + 89.7	6,266,000 + 0.8
Ship. 4-26 to 5-3	1,599,000 — 1.2	1,926,000 — 10.4	1,433,000 — 13.4	2,000 — 90.5	339,000 +192.2	5,299,000 — 4.7
Stocks, May 3	7,194,000 + 8.4	7,290,000 + 0.8	2,600,000 + 8.3	74,000 + 13.8	795,000 + 21.6	17,953,000 + 5.7
Ratio Sales to Prod.	74.1%	97.0%	87.8%	18.2%	70.6%	84.6%
STOVE DISTILLATE—Gallons						
Stocks, April 26	1,188,000	3,178,000	673,000	255,000	46,000	5,340,000
Prod. 4-26 to 5-3	363,000 + 38.0	391,000 — 12.9	152,000 — 10.1	144,000 +364.5	56,000 — 26.3	1,106,000 + 11.9
Ship. 4-26 to 5-3	147,000 + 2.1	431,000 + 26.4	440,000 +230.8	36,000 — 58.6	54,000 — 46.0	1,108,000 + 37.6
Stocks, May 3	1,404,000 + 18.2	3,138,000 — 1.3	385,000 — 42.8	363,000 + 42.4	48,000 + 4.3	5,338,000 — 0.04
Ratio Sales to Prod.	40.5%	110.2%	289.5%	25.0%	96.4%	100.2%
GAS OIL—Gallons						
Stocks, April 26	7,888,000	17,471,000	6,747,000	16,922,000	6,256,000	55,284,000
Prod. 4-26 to 5-3	2,010,000 — 11.2	4,572,000 + 53.6	1,941,000 + 70.6	2,079,000 + 5.3	2,238,000 + 6.6	12,840,000 + 22.9
Ship. 4-26 to 5-3	1,460,000 — 15.9	3,711,000 +184.6	1,334,000 + 56.2	1,627,000 + 40.5	1,745,000 — 25.1	9,877,000 + 33.8
Stocks, May 3	8,438,000 + 7.0	18,332,000 + 4.9	7,354,000 + 9.0	17,374,000 + 20.7	6,749,000 + 7.9	58,247,000 + 5.4
Ratio Sales to Prod.	72.6%	81.2%	68.7%	78.3%	78.0%	76.9%
FUEL OIL—Gallons						
Stocks, April 26	11,705,000	50,059,000	40,705,000	32,540,000	24,804,000	159,813,000
Prod. 4-26 to 5-3	5,265,000 — 0.3	6,514,000 — 11.6	7,139,000 — 1.8	8,067,000 — 3.5	8,112,000 — 8.9	35,097,000 — 5.0
Ship. 4-26 to 5-3	4,177,000 — 27.8	4,758,000 — 31.4	6,452,000 — 11.6	7,742,000 — 18.1	7,995,000 — 12.7	31,124,000 —19.4
Stocks, May 3	12,793,000 + 9.3	51,815,000 + 3.5	41,392,000 + 1.7	32,865,000 + 1.0	21,921,000 + 0.5	163,786,000+ 2.5
Ratio Sales to Prod.	79.3%	73.0%	90.4%	96.0%	98.6%	88.7%

Gasoline Produced by Various Methods, Week Ended May 3

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,602,000	68.8	11,554,000	67.4	5,625,000	74.5	3,951,000	95.9	3,039,000	47.2	30,771,000	68.6
Cracked	2,722,000	28.4	4,603,000	26.9	1,363,000	18.0	.....	....	2,784,000	43.2	11,472,000	25.6
Natural	271,000	2.8	975,000	5.7	568,000	7.5	168,000	4.1	618,000	9.6	2,600,000	5.8
Total	9,595,000		17,132,000		7,556,000		4,119,000		6,441,000		44,843,000	

Gasoline Shipments Are Largest Since September

Staff Special—By Telegraph

TULSA, May 7

GASOLINE shipments from 91 Mid-Continent refineries that report their weekly operating statistics to NATIONAL PETROLEUM NEWS, increased 2,000,000 gallons in the week ended May 3 over shipments in the preceding week. The shipments in the week ended May 3 totaled 46,630,000 gallons, the largest volume of shipments since the week ended Sept. 28, 1928.

Gasoline shipments were unchanged from Kansas refineries. Shipments from Oklahoma plants increased 600,000 gallons. North Central Texas plants increased their movement approximately 2,000,000 gallons to 10,046,000 gallons. Shipments were off 60,000 gallons at West Texas plants and 700,000 gallons at Louisiana-Arkansas refineries.

Some of the increase in North Tex-

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended May 3. Change in stocks figured from April 5.

GASOLINE

	Gallons
Production	180,359,000
Shipments	179,389,000
Net change in stocks	+970,000
Ratio sales to production	99.5%

KEROSENE

	Gallons
Production	25,837,000
Shipments	21,204,000
Net change in stocks	+4,633,000
Ratio sales to production	82.1%

STOVE DISTILLATE

	Gallons
Production	3,937,000
Shipments	3,209,000
Net change in stocks	+723,000
Ratio sales to production	81.6%

GAS OIL

	Gallons
Production	42,167,000
Shipments	30,824,000
Net change in stocks	+11,343,000
Ratio sales to production	73.1%

FUEL OIL

	Gallons
Production	147,778,000
Shipments	134,890,000
Net change in stocks	+12,888,000
Ratio sales to production	91.3%

as shipments may be attributed to one or two sizable export orders which were understood to have moved to Gulf terminals for early May loading.

Crude oil charges to stills increased 1300 barrels daily average. Other oil charges increased 6300 barrels daily average.

Gasoline production was virtually unchanged from the previous week. Gasoline stocks were reduced 1,700,000 gallons for the field as a whole. Oklahoma and North Texas refiners were the only ones to draw on stocks.

Kerosene stocks continued to increase as production remained virtually steady and shipments were lower by only 260,000 gallons. Stocks May 3 totaled 17,953,000 gallons. Stocks a year ago totaled 9,597,000 gallons or approximately 6,400,000 gallons less than the present total. Although West Texas plants were not included a year ago the figures nevertheless are comparable for practical purposes because of the small amount of kerosene made in the new refining district.

Kerosene stocks in four weeks ended May 3 increased 4,633,000 gallons.

Oklahoma and North Texas refiners drew heavily on stove distillate stocks with the result that the field balanced production and shipments.

Stove distillate stocks in the four weeks period increased 723,000 gallons.

Gas oil production increased 2,400,000 gallons, or 22.9 per cent, for the field. Increases were made in each district except Kansas where the reduction amounted to 11.2 per cent. The largest increases were in Oklahoma and North Texas where a large volume of cracked gas oil was produced when charges of other oils to stills were greatly increased.

Gas oil shipments increased 2,500,000 gallons or 33.8 per cent, this increase being accounted for in part by the larger charges of oils other than crude. Production outdistanced shipments and stocks were increased 3,000,000 gallons.

Fuel oil production was off 5 per cent in the whole field, with West Texas the only district showing an increase over the previous week's output. Shipments declined 19.4 per cent with each district sharing in this drop. Stocks were increased 3,900,000 gallons or 2.5 per cent.

PRAIRIE DU CHIEN, Wis.—H. N. Strickler, president of the Prairie Petroleum Co. here, has sold his company to the White Eagle Oil & Refining Co., Kansas City and the Badger Petroleum Products Co., to a group. Mr. Strickler plans to take a rest first before he decides to reenter the jobbing business.

FLOODLIGHT YOUR STATIONS
with Golden Glow Lantern-Floodlights

Lantern-Floodlight with glass panels removed, showing reflector mounted inside.

These Lantern-Floodlights serve the dual purpose of providing the ornamental effect of a lantern and floodlighting the entire station as well. They provide beautiful illumination without glare and are attractive day and night. Lantern-Floodlights are installed on your own property and controlled from your own meters. Please ask for Bulletin No. 273. We also manufacture a complete line of all aluminum projectors of highest quality.

ELECTRIC SERVICE SUPPLIES CO.

Home office and plant at 17th & Cambria Sts., PHILADELPHIA: District Offices at 111 No Canal St., CHICAGO; 50 Church St., NEW YORK; Bessemer Bldg., Pittsburgh; 88 Broad St., Boston; General Motors Bldg., Detroit; 316 N. Washington Ave., Scranton; Canadian Agents, Lyman Tube & Supply Company, Ltd., Montreal, Toronto, Vancouver.

Typical Complete Lantern-Floodlight Unit

Our Special—

58-60 S. R. Gasoline 400 e. p.
25-35% Benzol Equivalent
Passes all U. S. Motor specifications.

If you want a gasoline to compete with Premium Anti-Knock products, order a trial car.

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...It's a great comfort to be driving with Sinclair H-C Gasoline—because you know that right there under the accelerator is POWER—*instant, dependable* POWER—awaiting the touch of your foot to take you out of traffic jams safely, easily, quickly.

H-C is the High Compression gasoline that everybody is talking about. For better low gear performance, for top speed and power without a knock, for economical mileage—*you can't equal H-C Gasoline.* It gives High Compression performance in new or old engines of any type.

H-C runs your engine cooler—reduces vibration—lessens engine strain—gives better combustion and allows your engine to operate at its maximum compression and deliver its full power under all engine conditions. H-C is all gasoline, *without any foreign content*—and there never was a gas like it.

The properties which eliminate knocking are in this extraordinary gasoline—not in some added substance. H-C is the correct answer to your question: "What gas shall I use to keep the knock out of my cylinders?" Just try it—wherever you see the silver-like H-C pump.

The better all-year High Compression Anti-Knock fuel for all engines!

SINCLAIR H-C GASOLINE

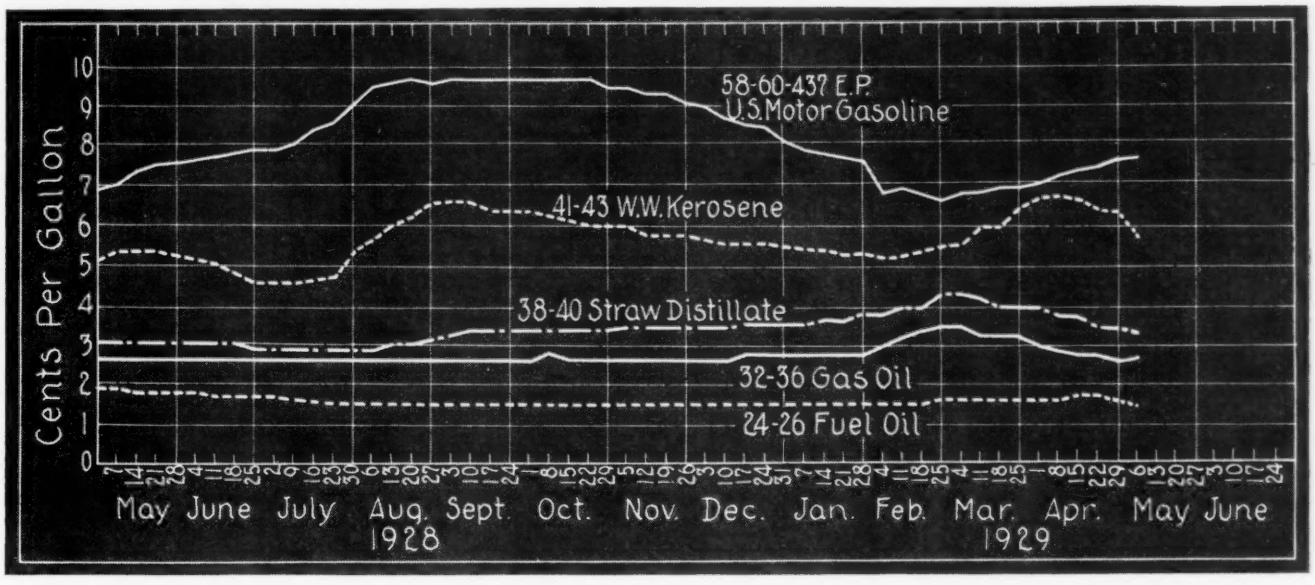
STOPS KNOCKS

SINCLAIR REFINING COMPANY, INC., 45 NASSAU STREET, NEW YORK ATLANTA BOSTON CHICAGO HOUSTON KANSAS CITY

Refinery - Tank Wagon Markets

National Petroleum News

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929

Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

Mid-Continent Gasoline Higher; Exporters Continue Active

Staff Special
TULSA, May 4

PURCHASE of approximately a million gallons of gasoline for coastwise or export shipment, an advance of 0.125 cent in price of 58-60 U. S. Motor in Oklahoma with announcement of another 0.125 cent advance effective May 6, and a continued steady demand from domestic trade featured the Mid-Continent refinery market the week of April 29-May 4.

Natural gasolines were in only fair demand. Inquiries were numerous for over the month shipment but spot buying was relatively light.

Kerosenes were quiet and prices lost some ground in all areas except Louisiana and Arkansas. No export inquiries were reported in the field.

Gas oils were sought by a few buyers for both spot and over the month delivery, but most of the buying done was by refiners seeking cracking stock. Distillates were in little active demand.

Fuel oils were steady both in price and demand with the possible exception of two or three of the higher grades.

Bright stock demand continued good and prices were advanced by several Oklahoma refiners. Neutral oils were unchanged in price but demand was steady.

Gasolines

A north Texas marketer late in the week bought a million gallons of 61-63, 390 e. p. gasoline for shipment to the Gulf. The gasoline was understood to have been for the account of a buyer who will move it either coastwise or for export. The price reported paid was 8 cents a gallon.

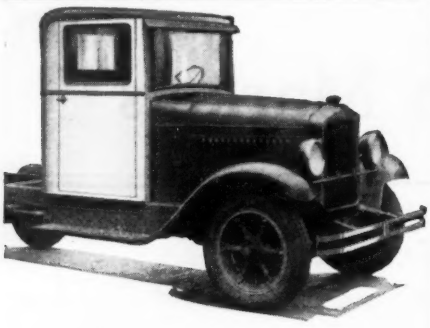
Other exporters showed some interest in the gasoline market but no sizable sales were reported prior to close of business May 4.

Several Oklahoma refiners on April 29 announced advances of 0.125 cent a gallon for 58-60 U. S. Motor, making the new price 7.625 cents a gallon. The advance became general, and by the middle of the week only a small number of cars were moving under that figure. The bottom prices for spot business to jobbers was 7.50 cents a gallon.

Several refiners May 4 sent out notices to division offices that effective May 6 58-60 U. S. Motor prices would be 7.75 cents a gallon. Prices of the higher gravity gasolines also were advanced in line with U. S. Motor, although the demand for the higher grades has been growing lighter for the past few weeks due to milder weather in much of the Middle West.

Several Louisiana, Arkansas and Kansas refiners announced May 4 that they would advance prices 0.125 to 0.25 cent a gallon May 6 or soon thereafter.

Refiners generally reported demand



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for gasolines from the domestic trade throughout the week was steady. Jobbers were not doing any amount of heavy buying but the total volume of business coming in was sufficient to keep most refiners even with their production.

Natural Gasolines

Lower grades of naturals were not in active demand and prices lost some ground. Grades A and AA were in sufficient demand, with what spot buying there was and the several inquiries for over the month, to prevent any material change in price. One large manufacturer openly offered to buy grade AA at 7.75 cents throughout the week, and this offer took care of any gasolines which otherwise might have become distress goods. Buyers reported manufacturers were reluctant to quote for shipment longer than 15 days, and the quotations in most instances were in line with the present spot market.

Kerosenes

The kerosene market continued to cause considerable discussion among the trade. The demand which was anticipated for around this season of the year has failed to develop, and prices have been moving steadily downward. Prices of 41-43 w. w. kerosene in Oklahoma May 4 was 6 to 6.25 cents, as compared with a price of 6.75 cents on April 4.

Most of the refiners making kerosene continue to anticipate an increase in demand in the next few weeks. The sales manager for one Oklahoma and Texas company recently journey through much of the Middle West and he said farmers were from three to six weeks behind with their spring work. Many of them have not been able to get into their fields.

Another refinery representative said farmers in the northern part of Kansas, in Iowa, Nebraska and perhaps one or two other states had not done a bit of spring plowing with their tractors. Many of them have not even planted their corn, he said, and the few who had were having to replant.

When the farmers do get into their fields, the spring plowing, followed closely by the harvesting of the winter crops is expected by many of the trade to stimulate kerosene buying.

The only drawback which they see is the fact that in many places the tank wagon price of kerosene is so near that of gasoline that farmers will not make an effort to switch to kerosene but will use gasoline for all their farm work.

Gas Oils and Distillates

Gas oil prices in each district except Arkansas were steady the past week. Refiners in Arkansas reduced prices slightly. Their largest gas oil demand at this time comes from rice growers who have to pump water onto their crops. With the rains which have prevailed in that section of the country the past few weeks growers have plenty of water without having to pump it at the present time and the buying of gas oils accordingly has been lighter.

Refiners continued to buy gas oils for cracking purposes and some inquiries were in the market in Oklahoma for goods for shipment to industrial plants but quotations were generally unchanged on these inquiries.

Distillates were moving mostly on contract. Spot buying was extremely light. The cold snap which hit some of the Middle West this week may stimulate buying for a day or two, but not in sufficient quantity to be reflected in prices.

Fuel Oils

Lower grade fuel oils were in more active demand at generally unchanged prices, both for spot and over the month shipment. Higher gravity oils slowed up somewhat and prices were slightly lower in some districts.

Bright Stocks

Several Oklahoma refiners advanced bright stock prices 1 to 1.50 cents a gallon. The price range for 150-160 vis. 210 bright stock May 4 was 33 to 34.50 cents a gallon. Neutral oil prices were unchanged. Wax prices also were unchanged with demand extremely light.

Rotary Lift Patent Held Valid

MEMPHIS, May 4.—Validity of the patent granted Peter J. Lunati on the rotary lift for servicing automobiles with grease and oil, was declared in a report submitted to Federal Judge Harry B. Anderson here recently.

Infringement of the patent was charged by the Automobile Rotary Lift Co., exclusive licensee under the Lunati patents, against Orgill Bros. & Co., Memphis distributor for Curtis Mfg. Co., St. Louis, which also manufactures rotary lifts. Mr. Lunati, inventor of the lift, is chief engineer in charge of manufacturing for the Automobile Rotary Lift Co.

The case will go to the U. S. Circuit Court of Appeals in Cincinnati.

Correction

Tank car prices for petroleum spirits have been incorrectly published in NATIONAL PETROLEUM NEWS since the issue of March 13. Correct price for all points in that and all succeeding issues was 11.50 cents flat, instead of 11 cents as shown.

CHICAGO, May 3.—The Calorizing Co. announces the removal of its Chicago office to 11132 S. Hoyne Ave., effective April 24.

Chicago Resale Market

Trade Expects Tank Wagon Advance

Staff Special
CHICAGO, May 4

INTEREST in the Chicago resale market in the week ended May 4 centered mostly around gasolines. Nearly all of the local trade were looking for an advance in tank wagon prices and felt that this depended mainly on the strength of the tank car market. The statement was made in several quarters that tank wagon prices would advance by the time the tank car market for U. S. Motor got to 8 cents.

The spot demand for U. S. Motor gasoline was good in nearly all quarters the latter half of the week, after moving rather slowly during the first half. Refiners reported their contract gasolines were moving well.

Gasoline prices were still showing an upward tendency and were 0.125 cent higher as the week closed. Announcement was made by several refiners that they would advance all grades of gasoline 0.125 cent on May 6. The bulk of movement on Oklahoma U. S. Motor gasoline was at 7.50 to 7.625 cents on April 29 and 30, but by May 1 there was little available at the lower figure. A number of sellers advanced their prices to 7.75 cents but the majority continued to quote 7.625 cents the rest of the week. U. S. Motor gasoline out of west Texas moved at 7.50 to 7.625 cents until May 3 and 4, when the bulk of sales were reported at 7.625 cents, Group 3 freight basis.

The advance of 0.25 to 0.50 cent in Ohio tank car prices by the Standard of Ohio, enabled more of the local sellers to move goods into that territory. The new price of 11.25 cents delivered, at Cincinnati nets back approximately 7.85 cents Group 3, as against the prevailing spot price of 7.625 cents in Chicago.

Little change was apparent in higher gravity gasolines this week. Prices were up approximately 0.125 cent in most quarters. One seller reported a better call for 60-62, 437 e.p. gasoline than for the U. S. Motor grade.

The 60-62, 437 e.p. moved mostly at 7.625 to 7.75 cents until May 2 and at 7.75 to 7.875 cents thereafter. Most sales of 60-62, 400 e.p. were at 7.75 to 7.875 cents April 29 and 30 and at 7.75 to 8 cents the remainder of the week. The 64-66, 375 e.p. grade moved at 8.125 to 8.25 cents after opening April 29 at 8 to 8.125 cents.

The demand for kerosene continued light in this territory and the spot price of 41-43 w.w. dropped below 6 cents for the first time in about two months. Inclement weather has hampered farming operations this spring and consequently most jobbers have not enjoyed their usual heavy kerosene demand. The decline in the 41-43 w.w. kerosene price was gradual over the week. The opening range was 6.125 to 6.375 cents. Quotations eased off until May 4 the bulk of movement was at 5.75 to 6.25 cents. Sales were reported, for resale, at 5.375 cents.

Distillates and gas oils were generally quiet and moved at lower price levels during the week. The demand for industrial gas oil was consistent in most quarters. The 38-40 light straw distillate moved at 3.50 to 3.625 cents the first half of the week and at 3.375 to 3.625 cents the latter half. Ordinary dark 32-36 gas oil moved mostly at 2.50 to 2.625 cents all week. The 32-36 dark zero grade opened at 2.75 to 2.875 cents; moved at 2.625 to 2.875 cents until May 4 and closed at 2.625 to 2.75 cents. Sales of the 32-36 straw zero gas oil were mostly at 2.75 to 2.875 cents.

Demand for fuel oils for prompt shipment was rather light and one local refiner reduced his price of 28-30 fuel 5 cents per barrel. A number of sellers were soliciting jobbers and industrial concerns for their next winter's fuel oil requirements. One company offered 28-30 zero fuel at "market price date of shipment" with a minimum price of $0.80 and a maximum of $1.15. Another offered 18-20 fuel at "market price date of shipment" with a minimum of $0.50 and a maximum of $0.70.

Prevailing prices of fuel oils for immediate shipment were generally unchanged during the week. The 28-30 zero was offered at $0.90 to $1.00 while the ordinary grade was $0.85 to $0.90. Most sellers quoted 24-26 fuel oil at $0.65 to $0.675. Low sulfur 18-22 fuel continued to move at $0.55 to $0.60, while most sales of high sulfur 18-22 were at $0.475 to $0.525. Sales also were reported at $0.45.

Occasional periods of precipitation will probably occur next week in Standard of Indiana territory and temperatures generally will be below or close to the seasonal normal.

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NATIONAL PETROLEUM NEWS
700 Penton Bldg.
Cleveland, Ohio

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

Comparative Prices of 58-60 U. S. Motor Gasoline, Group 3 and Point of Origin, to Jobbers Only, in Effect May 6

	Price F.O.B. Group 3	Price F.O.B Point of Origin	If for Particular Destination
Oklahoma	7.6696 (Wt. Avg.)	7.6696 (Wt. Avg.)	
Kansas	7.625-7.75	.....	S. O. Neb. & Ind. Territories, etc.
Kansas	.....	7.9038 (Wt. Avg.)	Kansas only.
North Texas	7.50-7.625	7.375-7.50	
West Texas	7.25-7.50	7.25-7.50	
Louisiana-Ark.	7.75	.....	Mich., Ohio & Indiana.
Louisiana-Ark.	.....	8.00	State or differential haul.
Indiana-Illinois	7.75	.....*	S. O. Ind. territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

Weighted Average Prices

OKLAHOMA (Weighted Average Prices)

	May 6		April 29		April 22	
	No. of cars	Price	No. of cars	Price	No. of cars	Price
58-60 U. S. Motor, 437 e. p.	98	7.6696	122	7.5635	80	7.5125
60-62 437 e. p. gasoline	12	7.8125	7	7.7857	5	7.7000
60-62 400 e. p. gasoline	1	8.1250	1	8.1250	6	7.8750
64-66 375 e. p. gasoline	1	8.6250	2	8.5000	1	8.5000

The weighted averages shown above which in the case of motor are based on total of 71 cars indicate the Oklahoma gasoline market is steady at a 7.5 to 7.625 range. The total motor sales is comparatively good for a half business day which also would indicate a good demand for gasoline.

Only odd cars were reported moved at any time the past week at under 7.5 by the few non-reporting refiners and most of these sales did not go direct to jobbers.

KANSAS (Weighted Average Price)

	May 6		April 29		April 22	
	No. of cars	Price	No. of cars	Price	No. of cars	Price
58-60 U. S. Motor 437 e. p.	13	7.9038	25	7.8800	8	7.7813

Gasoline demand in Kansas was slowed up slightly due to rains but business was sufficient in volume to keep prices firm. Demand over the week end was reported good by most refiners.

GASOLINE AND NAPHTHA

OKLAHOMA	Prices May 6	Prices April 29	Prices April 22
48-50 450 e.p. naphtha	7.125- 7.375	7.125- 7.375	†7.00 - 7.25
50-52 450 e.p. naphtha	7.125- 7.375	7.125- 7.375	†7.00 - 7.25
56-58 450 e.p. gasoline	7.25	7.25	7.125- 7.25
58-60 450 e.p. gasoline	7.25 - 7.375	7.25 - 7.375	7.25
64-66 390 e.p. gasoline	8.00 - 8.25	8.00 - 8.25	7.875- 8.00
68-70 350-360 e.p. gasoline	8.625- 8.75	8.625- 8.75	8.625- 8.75
PENNSYLVANIA			
52-54 Naphtha	8.75 - 9.00	8.50 - 9.00	8.50 - 9.00
54-56 Naphtha	8.75 - 9.50	8.75 - 9.50	8.75 - 9.50
58-60 U.S. Motor 437 e.p.	9.25 - 9.75	9.25 - 9.75	9.00 - 9.75
60-62 400-410 e.p. gasoline	9.50 -10.25	9.50 -10.25	9.50 -10.25
64-66 390 e.p. gasoline	10.25 -11.00	10.25 -11.00	10.25 -11.00
68-70 Str-run gas 350-360 e.p.	11.25 -12.00	11.25 -12.00	11.25 -12.00

OHIO (Quotations of S. O. Ohio. 3c state tax to be added.)

U. S. Motor Gasoline

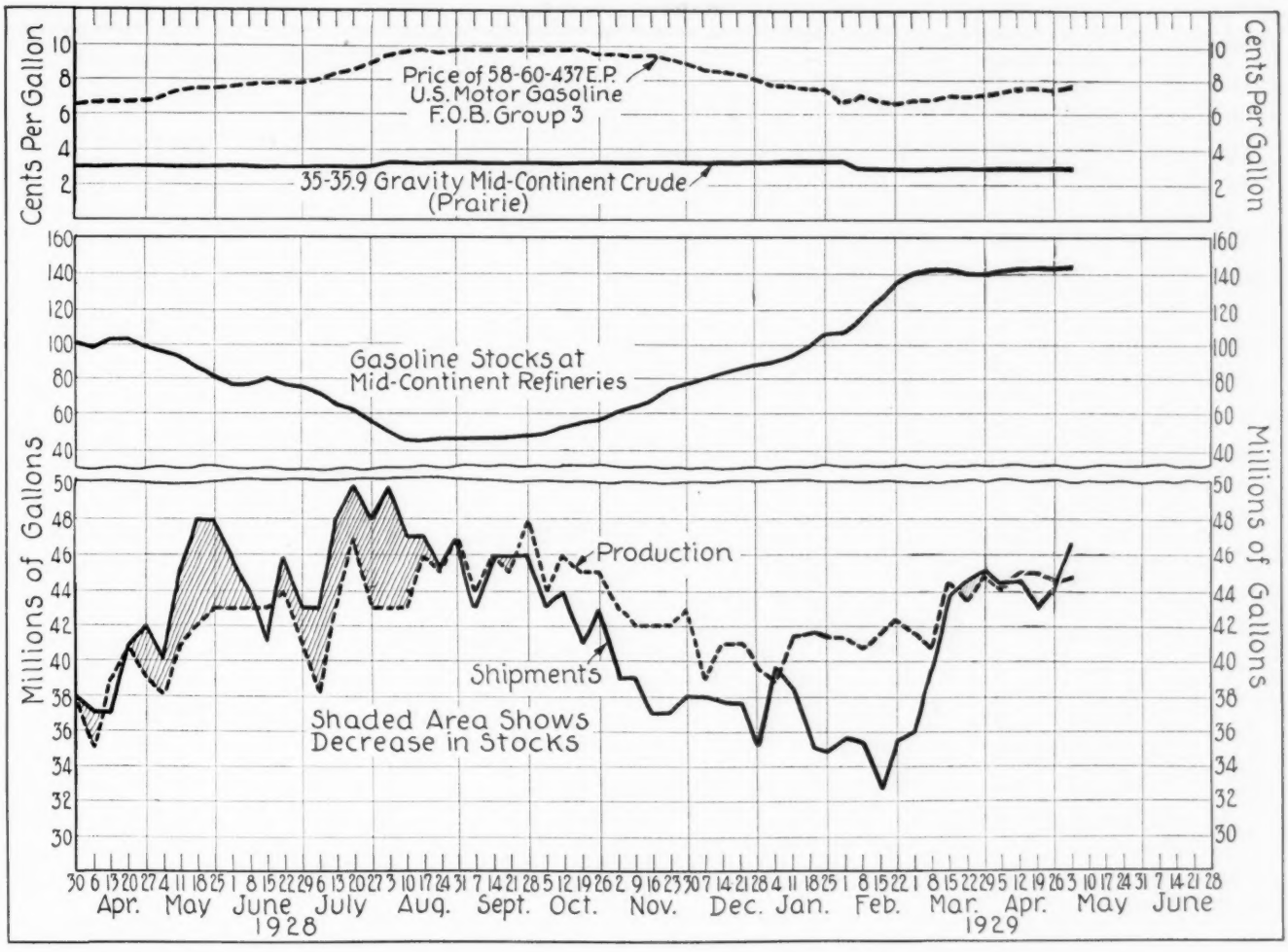
	Prices May 6	Prices April 29	Prices April 22
Cincinnati	11.25	10.75	10.75
Cleveland, Toledo, Lima, within refinery switching area	11.25	10.75	10.75
Elsewhere in Ohio	11.50	11.25	11.25
KANSAS (F. O. B. refinery Kansas destination)			
60-62 437 e.p. gasoline	7.75 - 8.00	7.75 - 8.00	7.50 - 7.75
60-62 400 e.p. gasoline	8.125- 8.375	8.00 - 8.25	8.00 - 8.125
64-66 375 e.p. gasoline	8.50 - 8.625	8.50 - 8.625	8.50 - 8.625
NORTH TEXAS			
48-52 450 e.p. naphtha	†7.00 - 7.125	†7.00 - 7.125	†7.00
56-58 450 e.p. gasoline	7.125	7.125	7.00
58-60 450 e.p. gasoline	7.125	7.125	7.00

(Continued on Page 122)

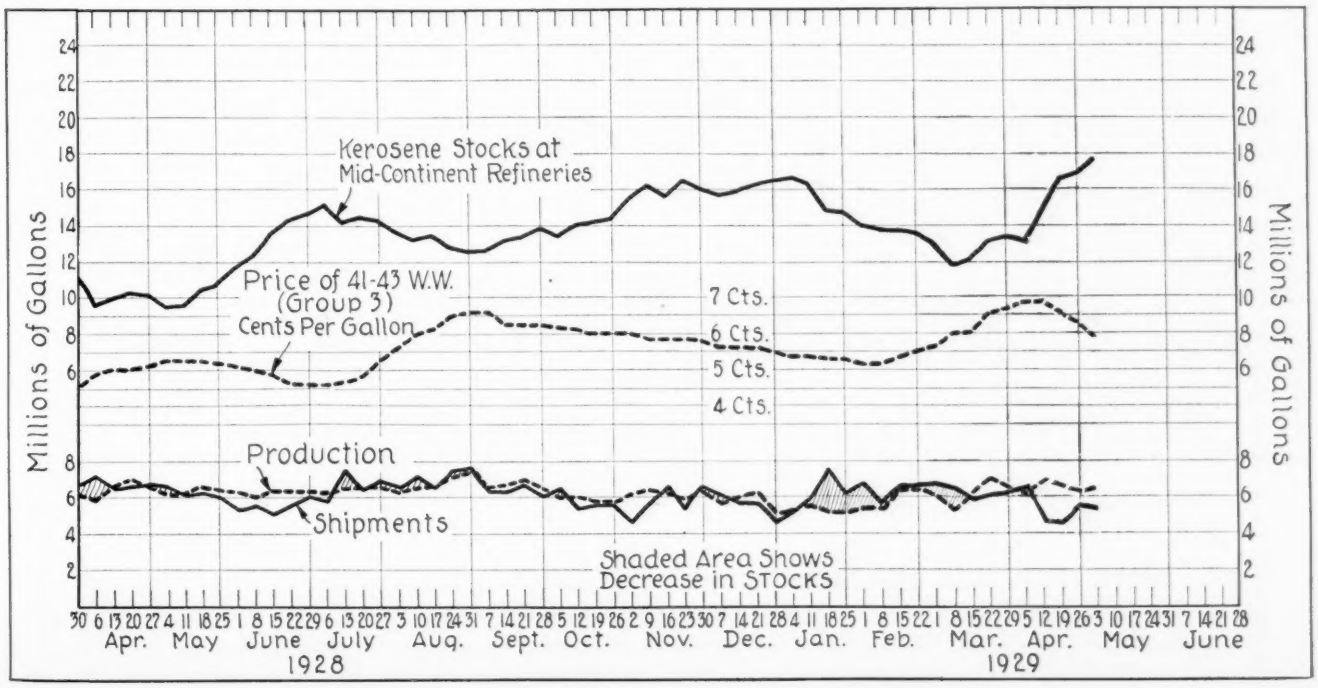
†Prices nominal ††Only one refiner quoting *Quotations only **Represents Both Sales and Quotations.

Barometer of Mid-Continent Refinery Market—Week Ending May 3

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, from Reports Made by 93 Plants to National Petroleum News


Cents Per Gallon
Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Gasoline Stocks at Mid-Continent Refineries
Millions of Gallons
Production
Shipments
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 114



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

NORTH TEXAS—Continued

	Prices May 6	Prices April 29	Prices April 22
58-60 U.S. Motor 437 e.p.	7.50	7.375– 7.50	7.25 – 7.50
60-62 400 e.p. gasoline....	7.50 – 7.625	7.50 – 7.625	7.50
64-66 390 e.p. gasoline....	7.625– 7.75	7.625– 7.75	7.625– 7.75
64-66 375 e.p. gasoline....	7.875	7.875	7.875
68-70 350-360 e.p. gasoline	8.25 – 8.375	8.25 – 8.375	8.25 – 8.50

****WEST TEXAS (F.o.b. West Texas refinery, for unrestricted shipment)**

50-52 naphtha.....	7.00 – 7.25	7.00 – 7.25	6.75
56-58 437 e.p. gasoline....	7.25 – 7.50	7.25 – 7.50	7.00
58-60 437 e.p. gasoline....	7.25 – 7.50	7.25 – 7.50	7.25 – 7.375

NORTH LOUISIANA (N. La., Ark., and Miss. destination)

58-60 U.S. Motor gasoline	8.00	7.875	7.75

ARKANSAS (Arkansas destination only)

58-60 450 e.p. gasoline....	7.75	7.50	7.50
58-60 U.S. Motor 437 e.p.	8.00	7.75 – 7.875	7.75
61-63 390 e.p. gasoline....	††8.75	8.00 – 8.50	8.25

‡CALIFORNIA

54-58 U.S. Motor 437 e.p.	7.75 – 8.50	7.00 – 8.50	7.50 –10.50
58-61 375-400 e.p. gasoline	8.50 –10.50	7.50 – 9.00	8.50 –11.50
42-45 Eng. dis. 445-480 e.p.....	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00

‡3c tax to be added to California gasoline prices if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA

Grade AA, 80-87.9, 90% Recovery.....	7.75	7.75	7.875
Grade A, 72-79.9, 90% Recovery.....	7.75	7.75	7.875
Grade BB, 84-92, 85% Recovery.....	‡7.25 – 7.375	7.50	7.75
Grade B, 76-83.9, 85% Recovery.....	‡7.25 – 7.375	7.50	7.75
Grade C, 80-90, 78% Recovery.....	‡7.00 – 7.25	7.375	7.50

Offers to buy; no sales reported.

NORTH TEXAS (F. O. B. Breckenridge)

Grade AA, 80-87.9, 90% Recovery.....	7.75	7.75	8.00
Grade A, 72-79.9, 90% Recovery.....	7.75	7.75	8.00
Grade BB, 84-92, 85% Recovery.....	‡7.25 – 7.375	7.50	7.75
Grade B, 76-83.9, 85% Recovery.....	‡7.25 – 7.375	7.50	7.75
Grade C, 80-90, 78% Recovery.....	‡7.00 – 7.25	7.375	7.50

Offers to buy; no sales reported.

NORTH LOUISIANA (F. O. B. Monroe District)

Grade AA.....	7.875	†7.875	†8.125
Grade BB.....	7.50	†7.625	†7.875
Grade C.....	7.375	†7.50	†7.625

CALIFORNIA

75-85, 375-390 e.p. blend	8.00 – 8.50	7.50 – 8.75	7.75 – 8.75

MOTOR FUEL BLENDS

OKLAHOMA

64-66 Blend 437 e.p....	7.50	7.50	††7.50

BURNING OILS

	Prices May 6	Prices April 29	Prices April 22
PENNSYLVANIA			
45 w.w. kerosene.....	7.25 – 7.75	7.375– 7.75	7.50 – 7.75
46 w.w. kerosene.....	7.75 – 8.125	7.75 – 8.125	7.75 – 8.00
47 w.w. kerosene.....	8.50 – 8.75	8.50 – 8.75	8.50 – 8.75
300 mineral seal.....	7.50 – 8.125	7.50 – 8.125	7.50 – 8.00
OKLAHOMA			
41-43 w.w. kerosene.....	5.75 – 6.125	6.25 – 6.50	6.50
42-44 w.w. kerosene.....	6.25 – 6.50	6.75 – 7.00	6.75 – 7.00
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene.....	6.50 – 6.75	6.75 – 6.875	6.75 – 6.875
42-44 w.w. kerosene.....	6.875– 7.00	7.125	7.125
NORTH TEXAS			
40-42 w.w. kerosene.....	5.75	6.00	6.125
41-43 w.w. kerosene.....	5.75 – 6.00	6.00 – 6.125	6.125– 6.25
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
41-43 w.w. kerosene.....	7.00 – 7.25	7.00 – 7.25	7.25
42-44 w.w. kerosene.....	7.00 – 7.25	7.00 – 7.25	7.25
ARKANSAS (Arkansas destination only)			
42-44 kerosene.....	7.00	7.00	7.25
CALIFORNIA			
38-40 w.w. kerosene.....	5.25 – 6.25	6.00 – 6.50	6.00 – 6.50

NEUTRAL OIL

PENNSYLVANIA

Vis.	(Viscosity at 70°F.)		
200 No. 3 Assoc. Filt.....	29.50 –30.00	29.50 –30.00	29.50 –30.00
180 No. 3 Assoc. Filt.....	25.50 –28.00	26.00 –28.00	26.00 –28.00
150 No. 3 Assoc. Filt.....	21.50 –23.00	22.00 –23.00	22.00 –23.00
	(Non Viscous)		
34 Grav. 330-340 Flash...	7.50 – 8.50	7.50 – 9.00	7.50 – 9.00

****OKLAHOMA**

Vis. Color	(Viscosity at 100°F.)		
100—No. 2.....	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
150—No. 3.....	7.50 – 8.50	7.50 – 8.50	7.50 – 8.50
150—No. 4.....	6.50 – 7.50	6.50 – 7.50	6.50 – 7.50
180—No. 3.....	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
180—No. 4.....	8.75 – 9.75	8.75 – 9.75	8.75 – 9.75
180—No. 5.....	8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
200—No. 3.....	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 4.....	10.00 –10.25	9.25 –10.00	9.25 –10.00
200—No. 5.....	9.50 –10.00	9.00 – 9.50	9.50
220—No. 3.....	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4.....	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5.....	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3.....	13.00 –13.50	13.00 –13.50	13.00 –13.50
240—No. 4.....	12.00 –13.00	12.00 –13.00	12.00 –13.00
240—No. 5.....	11.00 –13.00	11.00 –13.00	11.00 –13.00
280—No. 3.....	14.00 –15.50	14.00 –15.50	14.00 –15.50
280—No. 4.....	13.00 –14.00	13.00 –14.00	13.00 –14.00
280—No. 5.....	12.00 –13.00	12.00 –13.00	12.00 –13.00
300—No. 5-6.....	15.00 –17.00	15.00 –17.00	15.00 –17.00

†Prices nominal ††Only one refiner quoting *Quotations only **Represents both sales and quotations ***Represents quotations and offers to buy

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL

Vis.	Color	Prices May 6	Prices April 29	Prices April 22
		(Viscosity at 100°F., pour test 0)		
100	No. 2 Pale	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00
200	No. 3 Pale	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
300	No. 3 Pale	10.00 –10.50	10.00 –10.50	10.00 –10.50
500	No. 3½ Pale	12.00 –12.50	12.00 –12.50	12.00 –12.50
750	No. 4 Pale	13.00 –13.50	14.00 –14.50	14.00 –14.50
200	No. 5½ Red Oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300	No. 5½ Red Oil	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
500	No. 6 Red Oil	10.00 –10.50	10.00 –10.50	10.00 –10.50
750	No. 6 Red Oil	12.00 –12.50	12.00 –12.50	12.00 –12.50

CALIFORNIA

Vis.	Color			
		(Viscosity at 100°F.)		
100	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200	No. 3	11.50	11.50	11.50
300	No. 3	13.00	13.00	13.00
450	No. 3	15.50	15.50	15.50
550	No. 3	16.50	16.50	16.50
600	No. 3	17.00	17.00	17.00
200	No. 5	11.00	11.00	11.00
300	No. 5	12.00	12.00	12.00
400	No. 5	14.00	14.00	14.00
500	No. 5	15.00	15.60	15.00
600	No. 5	16.00	16.00	16.00
700	No. 7	18.00	18.00	18.00

CYLINDER STOCKS

**OKLAHOMA

190-200 Vis. at 210° Brt. St.	34.00 –35.00	34.00	33.50
150-160 Vis at 210° Brt. St.	32.00 –34.50	32.00 –33.00	32.00
600 E. St. 140-150 Vis.-210°	18.00 –20.00	18.00 –20.00	18.00 –19.00
600 St. Ref. Olive Green	10.50 –12.00	10.50 –12.00	11.00 –12.00
600 St. Ref. Dark Green	10.00 –11.00	10.00 –11.00	8.00 –10.00
Black Oil	5.00	5.00	5.00

PENNSYLVANIA (A. S. T. M. Tests)

600 Steam Refined, filterable	35.00 –37.00	†33.00 –35.00	†32.00–33.00
650 Steam Refined	41.00 –43.00	†38.00 –40.00	†38.00
600 Flash	45.00	†41.00 –43.00	†41.00
625 Flash	No quotations	†42.00 –45.00	†44.00 –45.00
600 Warren E	37.00 –38.00	†36.00	†33.00 –34.00
600 Oil City E	36.00 –37.00	†35.00	†32.00 –33.00
600 D Filtered	41.00	†39.00	†36.00 –37.00
Cold Test Stock, 40-50p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	55.00 –57.00	50.00 –52.00	49.00 –50.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	53.00 –56.00	49.00 –51.00	48.00 –49.00

WAX

PENNSYLVANIA Per pound, New York

122-124 white crude scale, a. m. p.	3.25 – 3.625	3.50 – 3.75	3.50 – 3.75
124-126 white crude scale, a. m. p.	3.25 – 3.75	3.50 – 4.00	3.75 – 4.00

‡One seller quoting.

OKLAHOMA

**124-126 White Crude Scale, a. m. p.	3.375– 3.50	3.375– 3.50	3.375– 3.50

CALIFORNIA

White crude scale, per pound, ton lots, a. m. p.	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

†Prices Nominal ††Only One Refiner Quoting *Quotations only **Represents both sales and quotations

FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

	Prices May 6	Prices April 29	Prices April 22
36-40 fuel oil	5.50 – 5.75	5.25 – 5.75	5.25 – 5.75
30-34 fuel oil	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
28-32 fuel oil	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00

OKLAHOMA

38-40 straw distillate	†3.375– 3.50	†3.375– 3.50	†3.50 – 3.625
36-38 straw distillate	3.25 – 3.375	†3.25 – 3.375	†3.375– 3.50
32-36 gas oil, straw	2.625	2.625– 2.75	2.75 – 3.00
32-36 dark gas oil	2.375– 2.50	2.50	2.50 – 2.75
32-36 zero gas oil	2.625	2.75	2.75 – 3.00
28-30 fuel oil (in bbls.)	$0.90 – 0.95	$0.90 – 0.95	$0.90 – 0.95
26-28 fuel oil (in bbls.)	$0.725– 0.75	$0.725– 0.75	$0.725– 0.75
24-26 fuel oil (in bbls.)	$0.65 – 0.70	$0.65 – 0.70	$0.65 – 0.70
22-26 fuel oil (in bbls.)	$0.55 – 0.60	$0.55 – 0.60	$0.575– 0.625
18-22 fuel oil (in bbls.)	$0.55 – 0.575	$0.55 – 0.575	$0.55 – 0.575
16-18 fuel oil (in bbls.)	$0.50 – 0.575	$0.50 – 0.575	$0.50 – 0.575
14-16 fuel oil (in bbls.)	$0.50 – 0.55	$0.50 – 0.55	$0.50 – 0.55

‡Zero cold test gas oil sells for 0.25 cent higher.

KANSAS (F. O. B. refinery Kansas destination)

38-40 straw distillate	3.50 – 3.625	3.50 – 3.625	3.875
36-38 straw distillate	3.50	3.50	3.50 – 3.75
32-36 gas oil	2.50 – 2.625	2.50 – 2.625	2.625– 2.75
24-26 fuel oil	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75
18-22 fuel oil	$0.625– 0.70	$0.625– 0.70	$0.65 – 0.70

NORTH TEXAS

38-40 straw distillate	3.75	3.75	3.75
32-36 gas oil, cracked	2.25 – 2.375	2.25 – 2.375	2.25 – 2.50
32-36 St. reduced gas oil	2.25 – 2.375	2.25 – 2.375	2.25 – 2.50
24-26 fuel oil (in bbls.)	$0.65 – 0.70	$0.65 – 0.70	$0.65 – 0.70
20-24 fuel oil	$0.65 – 0.675	$0.65 – 0.675	$0.65 – 0.675

**WEST TEXAS (F.o.b. West Texas refinery, for unrestricted shipment)

34-38 gas oil	2.375	2.375– 2.50	2.625
30-32 gas oil	2.00	2.00 – 2.25	2.375– 2.50
18-22 fuel oil	$0.30 – 0.35	$0.30 – 0.40	$0.30 – 0.40

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	3.00	3.00 – 3.25	3.00 – 3.25
32-36 gas oil, straw	3.00	3.00 – 3.25	3.00 – 3.25
16-20 fuel oil (in bbls.)	$0.70 – 0.75	$0.70 – 0.75	$0.75 – 0.80

ARKANSAS (Arkansas destination only)

32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
28-30 gas oil	2.875	2.875	2.875

CALIFORNIA (F. O. B. San Joaquin Valley. At. San Francisco, 4c per bbl. more)

14-18 fuel oil (per bbl.)	$0.55 –$0.65	$0.55 – 0.65	$0.55 –$0.65
14-18 Bunker oil (per bbl.)	$0.70 –$0.80	0.65 – 0.80	$0.65 –$0.75
30-34 gas oil (per bbl.)	$0.90 –$1.05	0.90 – 1.05	$0.95 –$1.05
27 Plus Diesel oil (per bbl.)	$0.90 –$1.00	0.90 – 1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f. o. b. refinery. In tank cars ⅝c to ¾c per pound less.) Two refiners quoting.

Snow White	8.50	8.50	8.50
Lily White	7.50 – 7.625	7.50 – 7.625	7.50 – 7.625
Cream White	6.50 – 6.625	6.50 – 6.625	6.50 – 6.625
Light Amber	3.625	3.625	3.625
Amber	3.375	3.375	3.375
Red	3.125	3.125	3.125

PETROLEUM COKE

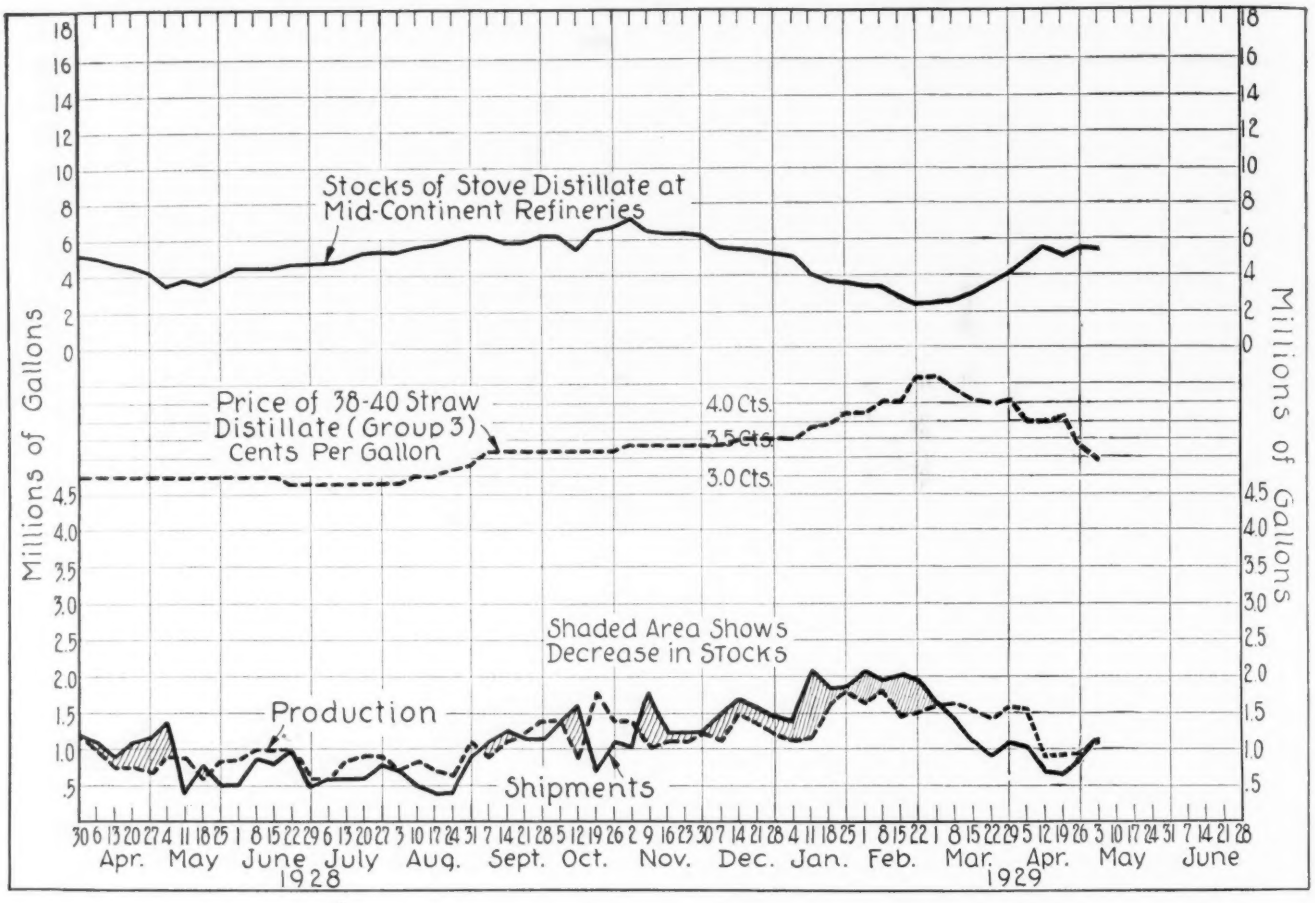
**OKLAHOMA

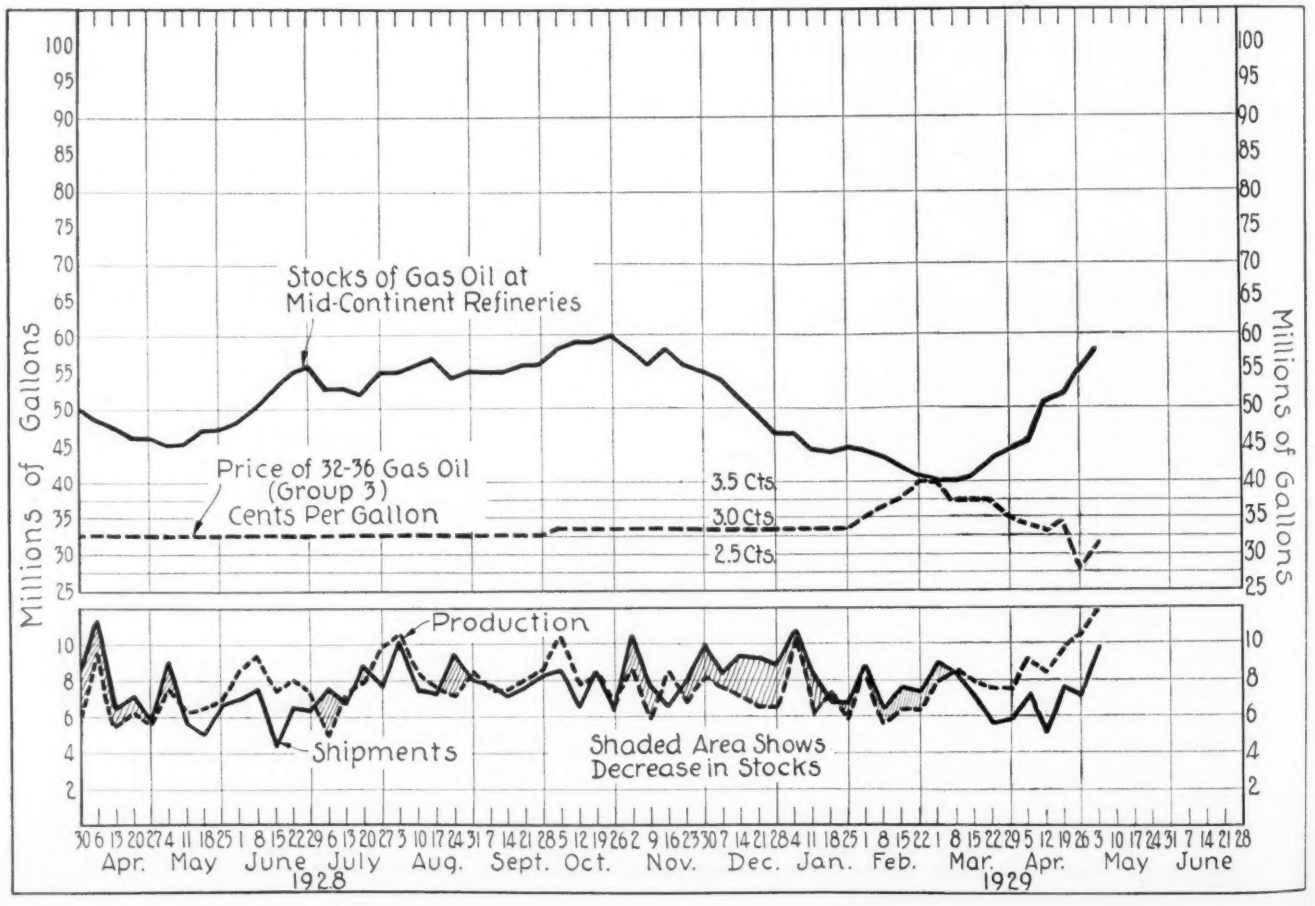
(Per ton in car lots)

Lump	$4.50 – 5.00	$4.50 –$5.00	$4.50 – 5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

Barometer of Mid-Continent Refinery Market—Week Ending May 3

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, from Reports Made by 93 Plants to National Petroleum News


Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallon
4.0 Cts.
3.5 Cts.
3.0 Cts.
Shaded Area Shows Decrease in Stocks
Production
Shipments
Millions of Gallons
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929


Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) Cents Per Gallon
3.5 Cts.
3.0 Cts.
2.5 Cts.
Production
Shipments
Shaded Area Shows Decrease in Stocks
Millions of Gallons
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929

The STANDARD ANTI-FREEZE

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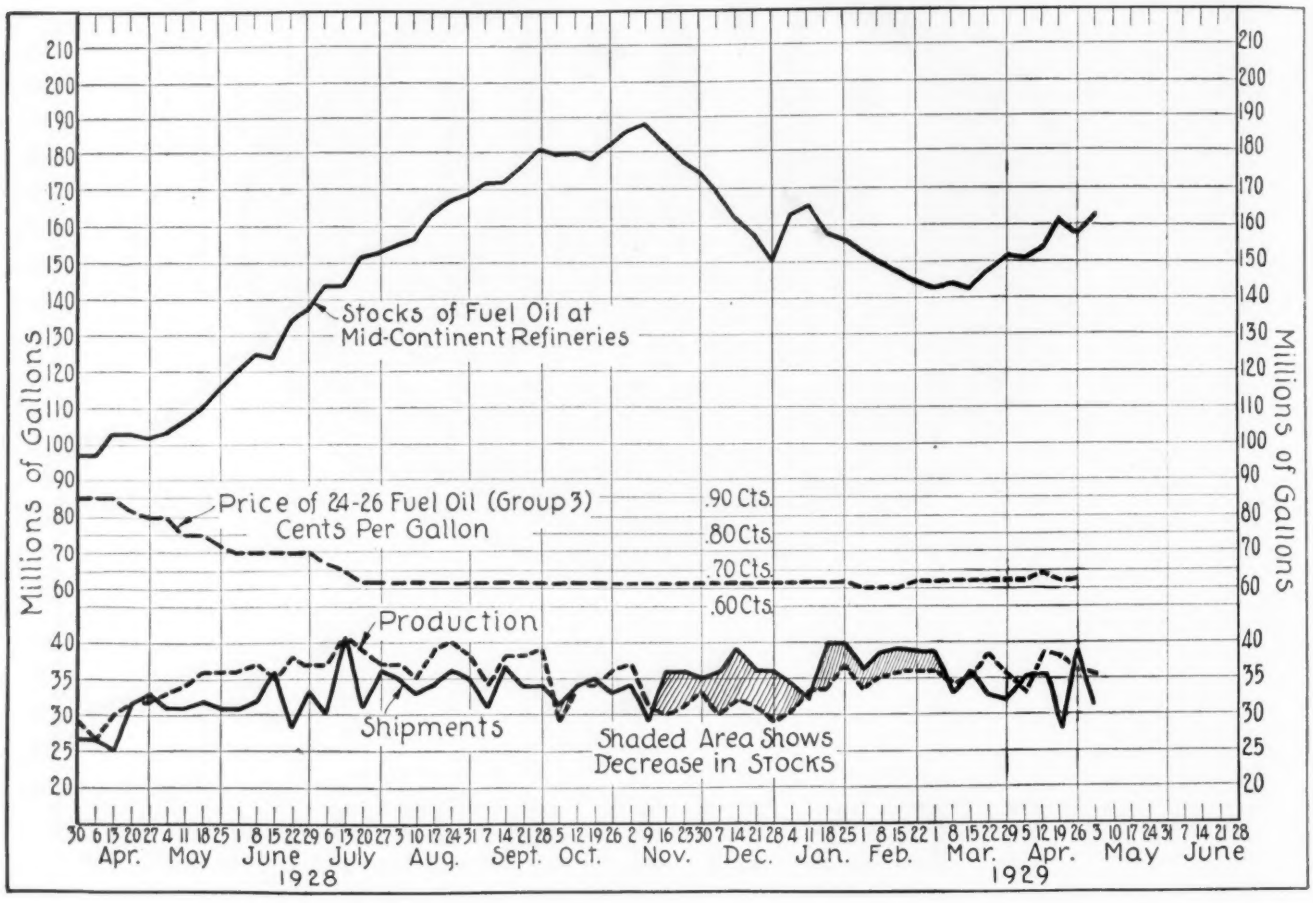
Barometer of Mid-Continent Refinery Market—Week Ending May 3

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, from Reports Made by 93 Plants to National Petroleum News


Millions of Gallons
Millions of Gallons
Stocks of Fuel Oil at Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) Cents Per Gallon
.90 Cts.
.80 Cts.
.70 Cts.
.60 Cts.
Production
Shipments
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929

California Refinery Market

Large Gasoline Shipments to East

LOS ANGELES, May 2

AN UNUSUAL slackness in local export circles is causing considerable worry to California shippers. Although a large quantity of gasoline has been moving in off-coast trade under contract, few spot sales have been made.

With the coming of motoring weather along the eastern seaboard and an advance in the eastern market, it was expected that gasoline demand would increase. Apparently, however, the movements under contract during the past few months have not been sufficient to prevent the storage of a considerable quantity of gasoline.

In excess of three million gallons of gasoline per month was shipped from the Pacific coast during the months of January, February and March, 1929. This is an increase of 50 per cent over the shipments in the same period of 1928.

Just when local gasoline retailers were congratulating themselves on the ending of a serious price war, rumors were heard of a new war and one that threatens to be even more serious than the last.

Gasoline is now retailing in various parts of Los Angeles and the surrounding territory at prices ranging from 12½ to 22½ cents.

U. S. Motor for out of state shipments showed a slight gain over the price quoted last week, some going for from 7.50 to 8 cents. For in-state use the quotations ranged from 8 to 8.50 cents, without tax.

Absorption gasoline was higher at 8 to 8.50 cents. No doubt the shutting-in of the wells in the Los Angeles Basin and the Coastal fields under the present curtailment plans has contributed to the improved condition of this market as it has meant a decrease in the quantity of wet gas available for the gasoline-recovery plants.

Kerosene stocks have piled up lately because of the mild weather. This has resulted in a drop in the prices of that commodity. Quotations for kerosene ranged from 5.25 to 6.25 cents and the probability of shading the lower figure.

Other refinery products showed no change from the prices quoted last week. Inquiries continued numerous and an optimistic feeling prevails for future business.

Pennsylvania Market

Lubes Advance

CLEVELAND, May 6.—Advances of 1 to 2 cents per gallon for cylinder oils, advances of from 5 to 7 cents per gallon in bright stock prices and further recessions in quotations for white crude scale wax were the high lights in western Pennsylvania markets the past week. Gasoline de-

mand continued fair and kerosene, according to the majority of reports, was moving satisfactorily. The status of other commodities was generally the same.

The market opened last Monday with the majority of manufacturers quoting 50 to 52 cents for light bright stock. Only small lots were offered for prompt shipment at the time. Steadily rising prices for 600 steam refined stock, however, stimulated further advances in quotations.

At the close of the week most sellers were quoting a minimum of 55 cents for No. 8 color oil. Others were quoting as high as 57 cents. A buyer reported paying 56 cents for 3 cars for immediate delivery. Dark bright stock was offered sparingly at 53 to 56 cents a gallon.

Cylinder stocks were a little more freely offered last week, but goods was by no means plentiful. Refiners reported no difficulty in finding buyers even at price levels 2 cents higher than those prevailing a week ago. Several sales of 600 steam refined were reported at 35 cents. One seller May 6 reported he had only 4 more cars to dispose of before his output for the balance of the month would be committed. Others said their entire production for the rest of May had been sold at 35 cents and higher.

The elimination of 9 cent gasoline was the only significant feature of last week's gasoline market. Two refiners who had been quoting this price for 58-60 U. S. Motor for spot shipment raised their prices May 4 to 9.50 cents. This grade still was available in some quarters, however, at 9.25 cents. Some sellers were asking as high as 10 cents.

Some decent motoring weather, a majority of the trade felt, is the only thing needed to bring about a much better gasoline market. Contract shipments are holding up fairly well, but spot demand has been a bit disappointing.

Fuel oil demand was reported good and prices for all grades remained unchanged. Straw color fuel, 36-40, was quoted at 5.50 cents minimum and several sellers reported they were having no trouble in getting 5.625 cents and 5.75 cents in some instances.

Both the foreign and domestic demand for wax continued at low ebb and prices eased off 0.25-cent per pound. White crude scale, both the 122-124 and 124-126 A.m.p. grades, was quoted at 3.25 cents by a few sellers. Several reported quoting as high as 3.75 cents for both grades but some of them were emphatic in stating they were not getting any business.

Bulk Storage and Station Tanks

Forty years successful experience; plant fully equipped for fabricating plate up to 1½" thick.
Pressure Stills for Cracking Process - Fractionating Towers - Dephlegmating Towers, Bubble Towers - Heat Exchangers - Agitators - Steam Stills - Crude Stills - Condenser Boxes, Run Down Tanks - Blending Tanks - Hemispherical Tanks - Blow Cases - Acid Tanks, Compounding Kettles - Storage Tanks to 80,000 Barrels - Smoke Stacks and Breechings, etc.

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How Many Aeroplanes?

National Petroleum News is compiling a census of aeroplanes owned by its readers.

If you or your company own one or more planes, will *you* drop us a line telling us the make, the type and how planes are used in *your* business?

Pictures will also be welcome.

NATIONAL PETROLEUM NEWS
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They Will Remember Your Gasoline By Its Color

Color your anti-knock or high test gasoline an attractive shade by which the public will recognize and remember your good product.

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11th & Monroe Sts. **St. Louis, Mo.**

Gulf Export Market

Foreign Gasoline Demand Recedes

Staff Special
NEW YORK, May 4

THE Gulf markets were featureless the past week as far as new business was concerned. Only one inquiry was reported in the market and, although it was reported closed, confirmation of the sale could not be obtained nor could details of the inquiry be learned. It was said the inquiry was from a French buyer.

In spite of the fact that no business was being done the trade was talking higher prices all week. Many of them have expected higher prices for the past two weeks in view of the fact that gasolines have been advancing in virtually all refining centers of the United States and further increases are expected. Too, the market is in good condition due to the heavy movement of contract goods which has been of sufficient volume to bring about a tightened tanker market and resultant increase in prices for clean bottoms.

The domestic market at the Gulf was more active during the past week and prices for U. S. Motor advanced an 0.125 of a cent. May 4 there was no gasoline available there for prompt shipment under 8 cents and a number of suppliers were considering advancing their prices even higher. One seller said he believed U. S. Motor would be at least 8.25 cents per gallon at present if it were not for the relatively low prices in the export market.

Other commodities for domestic shipment continued unchanged. Suppliers reported demand was still good for gas oils both for domestic and export shipment.

New York Domestic Market

Gasoline Higher Despite Bad Weather

Staff Special
NEW YORK, May 4

EASTERN gasoline markets have been in a healthy state during the past week and prices have advanced at several points. California gasoline at New York, Philadelphia and Baltimore is now selling at 9.50 cents flat, suppliers in the Norfolk district were quoting from 9 to 9.50 cents which is a 0.50 cent increase, and all New England prices were raised 0.125 of a cent. U. S. Motor at Boston and Providence was quoted 10.875 to 11 cents per gallon, delivered, and suppliers in the Portland district were obtaining 11.375 to 11.50 cents, delivered.

The higher prices came about in spite of the fact that bad weather has prevailed throughout the east for the past week or 10 days. It has been rainy and cold in most districts but despite that jobbers have been buying heavily and seeking to make contracts for over the remainder of May.

With the possible exception of one refiner, there were no sellers willing to take on any May business. This one refiner has announced that his price for over the month goods is 9.50 cents. Others believe that prices will go much higher than that before the month is out and are not accepting contracts.

At New York U. S. Motor was still selling at last week's prices of 9 to 9.25 cents. The demand at New York was as good as in any other district but one large refiner May 4, was still quoting the low figure. The remainder of the trade were largely quoting 9.25 cents. Two sellers were obtaining 9.125 cents, and it was reported May 2 that one refiner was asking 10 cents.

While there has been an apparent reluctance to sell U. S. Motor at New York for over May, a number of the trade were considering May 4, of making 9.50 cents their quotations for over the first 15 days. One refiner stated that he expected to announce that as his price early in the coming week. A number of other sellers also were considering advancing to this price.

Kerosenes remained unchanged at all points both in price and demand. One refiner stated early in the week that his price at New York was 8.50 cents, a 0.50 cent higher than the general quotation, but also said that he had very little goods to offer and only disposed of an occasional car.

Wax Market

Buyers Inactive

NEW YORK, May 4.—Wax prices were generally unchanged during the past week with changes in the 122-124 A.m.p. and 135-137 A.m.p. grades only. The former grade at the close of the week was selling at 3.50 to 3.75 cents which was an 0.125 of a cent higher on the low price than a week ago. The latter grade was selling at 6.50 to 6.875 cents which was an 0.125 of a cent higher on the high range than the week before.

The market was quiet all week with only small sales to domestic buyers reported. Inquiries have been few with no foreign activity to speak of. One seller, however, expected to see prices in the next few weeks start upward with the return to the market of domestic buyers who he believed would be buying by June 1. He was also of the opinion that foreign buyers would make some fair sized purchases in the United States before many more weeks. He based his opinion on the fact, he said, that foreign buyers had not been in the market much to speak of for the past several months and that their stocks were no doubt running low.

Designs Low Temperature Viscosity Test

CLEVELAND, May 6.—Dr. E. R. Lederer, vice-president of the Texas Pacific Coal & Oil Co. at Fort Worth, has designed a machine of his own for measuring the viscosity of motor oils at low temperatures.

There is now no standard apparatus for measuring viscosity at temperatures in the neighborhood of zero.

Dr. Lederer's device consists of a modified Saybolt viscosimeter incased in a Kelvinator which provides refrigeration to any temperature desired. Besides the refrigeration feature, the other modifications of the viscosimeter are that an orifice 3 millimeters in diameter is used and a compressed air line is led into the instrument.

When a sample of oil is to be tested, it is placed in the receptacle of the viscosimeter and the refrigerating machine started. When the desired temperature is reached, the compressed air is turned on and allowed to build up a pressure on the oil sample of about 7 pounds to the square inch, as indicated by a gauge connected up with the apparatus.

Then the cork is pulled out and

the oil allowed to flow out, the time it takes to flow out is measured.

Dr. Lederer uses 7 pounds pressure because he states this duplicates the conditions in a cold engine. He says that 7 pounds to the square inch is the standard pressure on the suction side of oil pumps in airplane engines and that it is about the average pressure for automobile oil pumps, therefore the rate at which the oil flows out of his apparatus is the same rate at which it could be expected to flow through the lubricating system of an automobile or airplane, he says.

Exposition Plans Under Way

TULSA, May 4.—Active preparations have been started for the sixth International Petroleum Exposition and International Petroleum Congress to be held in Tulsa in October 5 to 12. The Congress will hold sessions before and during the Exposition.

Expansion of the scientific section was provided for at a recent meeting of the Exposition directors. A new building, which will provide additional space for the science displays, will also allow an auditorium which will have a seating capacity of 400 or more. It will also be provided with facilities for picture or other demonstrations in technical meetings. The new building is to be outside of the noise zone of the machinery exhibits.

The policy, adopted two years ago, of excluding from the grounds all events or displays not pertinent to the oil industry will be adhered to during the coming exposition. The Exposition grounds will continue to be improved.

Dates and meeting places will be assigned the various organizations which schedule meetings during the Exposition period.

James H. Herbert Now With S. O. Ohio

CLEVELAND, May 6.—James H. Herbert, for some time assistant manager of the refinery of the Conewango Refining Co., at Warren, Pa., and right hand man of manager Harry R. Lewis, recently resigned from that position to enter the employ of the Standard Oil Co. of Ohio.

Mr. Herbert is now assistant superintendent of No. 2 works of the Standard at Cleveland.

He attracted much favorable attention through his leadership of the fire and safety marshals of the National Petroleum Association.

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and Steel Buildings

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CHICAGO—35 East Wacker Drive

NEW YORK—342 Madison Avenue

CLEVELAND—1213 West Third St.

Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations.)

U. S. MOTOR GASOLINE	May 6	April 29	April 22
New York harbor	9.00 – 9.25	9.00 – 9.25	9.00 – 9.25
Portland district	**11.375–11.50	**11.00–11.375	**11.00–11.25
Boston district	**10.875–11.00	**10.75–10.875	**10.50–10.75
Providence district	**10.875–11.00	**10.75–10.875	**10.50–10.75
Philadelphia district	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
Baltimore district	9.00 – 9.50	9.00 – 9.50	9.00 – 9.25
Norfolk district	9.00 – 9.50	9.00	9.00
Charleston district	9.00	9.00	9.00
Savannah district	9.00	9.00	9.00
Jacksonville district	9.00	9.00	9.00
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	9.50	9.50	9.00 – 9.50
Philadelphia district	9.50	9.00 – 9.50	9.00 – 9.25
Baltimore district	9.50	9.25 – 9.50	9.00 – 9.25
WATER WHITE KEROSENE			
New York harbor	8.00	8.00	8.00
Philadelphia district	8.00	8.00	8.00
Baltimore district	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
GAS OIL: 28-34 Gravity			
New York harbor	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
Boston district	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
FURNACE OIL: 36-40 Gravity			
New York harbor	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
Boston district	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
GRADE C BUNKER OIL†			
New York harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$2.00 –$2.10	$2.00 –$2.10	$2.00 –$2.10
MEDICINAL OILS, RUSSIAN			
885-890 s.g., 325-330 vis.	$0.75 – 0.80	$0.75 – 0.80	$0.80 – 0.90
870-875 s.g., 150-155 vis.	$0.65 – 0.70	$0.65 – 0.70	$0.67 – 0.77
860-865 s.g., 80-85 vis.	.....	.....	$0.65 – 0.75

Note: Above gasoline prices do not include inspection tax levied in some states.
*Minimum delivered. **Delivered prices. †Lighterage 5c per bbl. additional

New York Export Market

(Lubricating oils are per gal. in bbls.)

	May 6	April 29	April 22
CYLINDER OILS (Pennsylvania Products)			
Bright stock, dark	*56.00	*55.00 –56.00	*55.00 –56.00
600 D filtered	*46.00 –48.00	*43.00	*43.00
600 Warren E filtered	*44.00 –46.00	*40.00	*40.00
600 s.r. unfiltered	*41.00 –42.00	*38.00 –40.00	*38.00 –40.00
650 s.r., unfiltered	*47.00 –48.00	*45.00	*45.00
600 flash, s.r.	*48.00 –49.00	*46.00	*46.00
630 flash, s.r.	*53.00 –54.00	*50.00 –52.00	*50.00 –52.00
*Nominal			
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00	20.00	20.00
250 vis. No. 6 color	19.50	19.50	19.50
200 vis. No. 6 color	18.00	18.00	18.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	23.50	23.50	23.50
180 vis. No. 3¼ color	19.00	19.00	19.00
100 vis. No. 2¼ color	16.00	16.00	16.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	33.00	33.00	33.00
500 vis. No. 6½ color	31.00	31.00	31.00
400 vis. No. 7¼ color	30.00	30.00	30.00
300 vis. No. 6 color	29.00	29.00	29.00
200 vis. No. 6 color	28.00	28.00	28.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70
WAXES (In cents per pound, f.a.s. carload lots)			
WHITE CRUDE SCALE (In barrels)			
122-124 A.m.p.	3.50 – 3.75	3.375– 3.75	3.50 – 3.75
124-126 A.m.p.	3.50 – 3.875	3.50 – 3.875	3.625– 4.00
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
125-127 A.m.p.	4.50 – 4.75	4.50 – 4.75	4.75 – 5.00
128-130 A.m.p.	4.625– 5.125	4.625– 5.125	5.125
130-132 A.m.p.	5.875– 6.00	5.875– 6.00	6.00
133-135 A.m.p.	6.125– 6.25	6.125– 6.25	6.25 – 6.50
135-137 A.m.p.	6.50 – 6.875	6.50 – 6.75	6.50 – 6.75
YELLOW CRUDE SCALE			
124-126 A.m.p.	3.375– 3.625	3.375– 3.625	3.625

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. or more unless otherwise noted and for export shipment only).

GASOLINE	May 6	April 29	April 22
U. S. Motor	8.50	8.50	8.50
60-62 400 e.p.	9.50	9.50	9.50
61-63, 390 e.p.	9.75	9.75	9.75
64-66, 375 e.p.	10.00	10.00	10.00
U. S. Motor, cases (cargoes)	$1.75	$1.75	$1.75
64-66, cases (cargoes)	$1.90	$1.90	$1.90
KEROSENE			
44 water white	8.75	8.75	8.75
41-43 prime white	7.75	7.75	7.75
Water white, cases (cargoes)	$1.80	$1.80	$1.80
Prime white, cases (cargoes)	$1.70	$1.70	$1.70
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	3.875– 4.00	3.875– 4.00	3.875– 4.00
*30 plus translucent gas oil	4.00	4.00	4.00
Grade C bunker oil	$0.875–$0.95	$0.875–$0.95	$0.875–$0.95
Grade C bunker oil, cargoes	$0.75 – 0.80	$0.75 – 0.80	$0.75 – 0.80
*Less than ½ of 1% sulfur.			
MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.65	$0.65	$0.65
Grade C bunker oil, for bunkering purposes, taxes paid	$0.85	$0.85	$0.85
SOUTH TEXAS LUBRICATING OILS, (Viscosity at 100° F.: cold test 0) (Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
200 vis. No. 3 unfiltered pale	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
300 vis. No. 3 unfiltered pale	9.00 –10.00	9.00 –10.00	9.00 –10.00
500 vis. No. 3½ unfiltered pale	10.50 –11.00	10.50 –11.00	10.50 –11.00
750 vis. No. 4 unfiltered pale	13.00 –13.25	13.00 –13.25	13.00 –13.25
1200 vis. No. 5 unfiltered pale	16.00 –17.00	16.00 –17.00	16.00 –17.00
200 vis. No. 5-6 red oil	7.50	7.50	7.50
300 vis. No. 5-6 red oil	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
500 vis. No. 5-6 red oil	9.50 –10.50	9.50 –10.50	9.50 –10.50
750 vis. No. 5-6 red oil	11.50 –12.00	11.50 –12.00	11.50 –12.00
1200 vis. No. 5-6 red oil	16.50	16.50	16.50

Gulf Domestic Market

(Prices are f.o.b. Gulf oil terminals in Texas and Louisiana in shipments of 20,000 bbls. or more, representing sellers' opinions, for domestic shipment only).

	May 6	April 29	April 22
U. S. Motor gasoline	8.00	7.875	7.875
41-43 w.w. kerosene	7.25	7.25	7.25
*26-32 translucent gas oil	4.00	4.00	4.00
*Less than ½ of 1% sulfur.			

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	May 6	April 29	April 22
Gasoline, U. S. Motor, 53-55 Gravity	7.00 – 7.50	7.00 – 7.50	7.00 – 7.75
Gasoline, U. S. Motor, blends and special cuts	7.50 –10.00	7.50 –10.00	7.50 –10.00
Gas Oil, 30-34, per barrel	$0.95 –$1.05	$0.95 –$1.05	$0.95 –$1.05
Diesel Oil, 27 plus, per barrel	$0.875–$1.00	$0.875–$1.00	$0.875–$1.00
Bunker oil, 14-18, per barrel	$0.70 –$0.85	$0.70 –$0.85	$0.70 –$0.85
Fuel oil, 14-18 per barrel	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.50 – 6.25	5.50 – 6.25	5.50 – 6.25
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	May 6	
	Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	28–30	28
Gulf to U. K. or Continental ports*	17–18	17/6–18/6
North Atlantic to U. K. or Continental ports*	16	15/6–16/6
Calif. to North Atlantic ports (not E. of N. Y.)	65	$1.00
Gulf to North Atlantic ports (not E. of N. Y.)**	21	35–40

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.
**For Venezuela loading 1c per bbl. additional. For Tampico loading 4c per bbl. additional.

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—the new fast selling grease package
—Rigid can — collapsible grease container. Positive in action
—Highly attractive —big in sales appeal
—Clean in use

EMPTY (showing expelling action)

FULL (cutaway view)

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National marketers using CANTUBES have proven their greater sales appeal—their larger sales volume and turnover—and their better grease profits.

CANTUBE is a new idea in grease packages—so easy and economical to fill (can't be refilled). So easy to empty—so clean to handle.

CANTUBE is a new idea in grease selling. The can proper is metal—rigid—just fits the hand. The grease is contained in a special "leak-proof" sack. An easy turn, of a free moving bottom rim, expels the grease—just as much as is needed or ALL of it. The screw action is so sturdy you can't twist it off or break it.

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WARREN PENNSYLVANIA U·S·A

Tank Wagon Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect May 6, 1929, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	12	2	14	18	13
Newark, N. J.	14	2	16	20	13
Annapolis, Md.	14	4	18	22	13
Baltimore, Md.	14	4	18	22	12
Cumberland, Md.	14	4	18	22	13
Washington, D. C.	14	2	16	20	12
Danville, Va.	14	5	19	23	13
Norfolk, Va.	14	5	19	23	13
Richmond, Va.	14	5	19	23	13
Roanoke, Va.	14	5	19	23	13
Petersburg, Va.	14	5	19	23	13
Charleston, W. Va.	14	4	18	22	13
Keyser, W. Va.	14	4	18	22	13
Parkersburg, W. Va.	14	4	18	22	13
Wheeling, W. Va.	14	4	18	22	13
Charlotte, N. C.	14	5	19	23	13
Hickory, N. C.	14	5	19	23	13
Mt. Airy, N. C.	14	5	19	23	13
Salisbury, N. C.	14	5	19	21	13
Charleston, S. C.	14	6	20	24	13
Columbia, S. C.	14	6	20	24	13

CONTINENTAL OIL

Denver, Colo.	15	4	19	22	15.5
Pueblo, Colo.	15	4	19	22	15.5
Grand Junc., Colo.	18.5	4	22.5	25.5	19
Casper, Wyo.	15	4	19	22	14
Cheyenne, Wyo.	16	4	20	23	15.5
Butte, Mont.	19.5	5	24.5	27.5	20
Helena, Mont.	19.5	5	24.5	27.5	20
Salt Lake City, Utah	17.5	3½	21	24	17
Boise, Ida.	19.5	4	23.5	26.5	19
Twin Falls, Ida.	19.5	4	23.5	26.5	19
Albuquerque, N. M.	15	5	20	23	17

S. O. CALIFORNIA

Phoenix, Ariz.	14	4	18	22	21.5
Los Angeles, Cal.	15.5	3	18.5	22.5	15.5
Fresno, Cal.	16	3	19	23	16.5
San Francisco, Cal.	16	3	19	23	15.5
Reno, Nev.	20	4	24*	28	19
Portland, Ore.	16.5	3	19.5	23.5	16.5
Seattle, Wash.	16.5	2	18.5	22.5	16.5
Spokane, Wash.	20.5	2	22.5	26.5	20.5
Tacoma, Wash.	16.5	2	18.5	22.5	16.5

Note: 3c per gal. discount to dealers off t.w. price thru territory.

S. O. LOUISIANA

Little Rock, Ark.	13	5	18	22	13
Alexandria, La.	12	4	16	20	†16
Baton Rouge, La.	11	4	15	19	†14.5
Lake Charles, La.	††13.5	4	††17.5	††21.5	†16
New Orleans, La.	*12.5	4	*16.5	20.5	†16
Shreveport, La.	12	4	16	20	†15
Lafayette, La.	**13	4	**17	**21	†14
Bristol, Tenn.	15	5	20	23	14
Chattanooga, Tenn.	14.5	5	19.5	23.5	16
Knoxville, Tenn.	15	5	20	24	16
Nashville, Tenn.	12	5	17	21	16
Memphis, Tenn.	11	5	16	20	12.5

*New Orleans gasoline prices include 1c parish tax in addition to 4c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

**Lafayette gasoline prices include 1c parish tax in addition to 4c state tax.

††Lake Charles gasoline prices include 1c parish tax.

S. O. KENTUCKY

Ashland, Ky.	14	5	19	20	15.5
Catlettsburg, Ky.	14	5	19	20	15.5
Lexington, Ky.	15	5	20	22	15.5
Louisville, Ky.	15	5	20	22	15
Covington, Ky.	15	5	20	21	15.5
Clarksdale, Miss.	16	5	21	23	12.5
Gulfport, Miss.††	17.5	5	22.5	24.5	14
Jackson, Miss.	15	5	20	22	13
Natchez, Miss.	15.5	5	20.5	22.5	14
Vicksburg, Miss.	15.5	5	20.5	22.5	14
Birmingham, Ala.	14	4	18	20	13
Mobile, Ala.‡	17	4	21	23	15
Montgomery, Ala.*	18	4	22	24	16.5
Atlanta, Ga.	17	4	21	23	†16.5
Augusta, Ga.	17	4	21	21	†15.5
Macon, Ga.	17	4	21	23	†16.5
Savannah, Ga.	16	4	20	22	†15.5
Jacksonville, Fla.	17	5	22	24	14.5
Miami, Fla.	18	5	23	25	15.5
Tampa, Fla.	17	5	22	24	14.5
Pensacola, Fla.**	18	5	23	25	14.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

Latest Changes In Tank Wagon Prices

Gasoline Changes

S. O. New Jersey—T.w. and s.s. gasoline cut 2c, Atlantic City, to 14c and 18c respectively, including 2c tax, **April 9.**

S. O. New York—Gasoline prices advanced 2c, thru New York, covering tax of that amount effective **May 1.**

S. O. Ohio—T.w. and s.s. gasoline advanced 1c, thru Ohio, making state-wide prices 19c and 20c respectively, including 4c tax, **May 6.**

On the same date Summit county was put back on state-wide price structure, making an advance of 2c in that county.

Columbiana county was raised 1c, to 18c t.w. and 19c s.s., **May 4,** excepting East Liverpool and Wellsville, and another 1c, to state-wide price structure, **May 6.**

Lorain county was raised 1c, to 18c t.w. and 19c s.s., **May 1,** and another 1c, to state-wide structure, May 6.

New prices in Franklin, Scioto and Fairfield counties are 18c t.w. and 19c s.s. These prices also apply in East Liverpool, Wellsville, Perrysburg, Bryan, Hicksville, Marion, Lima, Mansfield, Fostoria, Piqua and Piketon.

New prices in Fayette and Tuscarawas counties, Hamilton and Findlay, are 18c for both t.w. and s.s., including tax.

New price in Wilmington is 16c for both t.w. and s.s., at Celina, 18c t.w. and 19c s.s.; at Wapakoneta, Urbana and Jamestown, 17c t.w. and 18c s.s.

Discounts at all points are unchanged.

S. O. Indiana—Gasoline prices advanced 1c, thru Minnesota, covering tax increase of that amount to 3c, **May 1.**

S. O. Louisiana—T.w. and s.s. gasoline advanced 1c, thru Louisiana and Arkansas, **April 30.**

Magnolia Petroleum—S.s. price only gasoline advanced 1c, Muskogee and Tulsa, to 19c, **May 1.**

T.w. and s.s. prices cut 1c, Muskogee and Tulsa, to 14c and 18c respectively, including 3c tax, **May 3.**

T.w. and s.s. prices cut 2c, Texarkana, to 14c and 18c respectively, including 2c Texas state tax, April 26.

Continental Oil—Gasoline prices advanced 1c thru Colorado, covering tax increase of that amount to 4c, **May 1.**

Continental Oil—T.w. and s.s. gasoline cut 1c, Albuquerque, to 20c and 23c respectively, including 5c tax, **May 4.**

S. O. California—Correction: T.w. and s.s. prices gasoline at Phoenix should have been 18c and 22c respectively, including 4c tax since **Aug. 14, 1928,** this being a 2c increase. All issues after Aug. 14 last should have shown this price, instead of 16c and 20c.

Kerosene Changes

Magnolia Petroleum—Kerosene cut 1c, Tulsa, to 10c t.w., **April 30.**

S. O. NEBRASKA

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Omaha, Neb.	14.25	4	18.25	20.25	13.25
McCook	15.75	4	19.75	21.75	14.75
Norfolk	14.75	4	18.75	20.75	13.75
North Platte	15.75	4	19.75	21.75	14.50
Scottsbluff	15.75	4	19.75	21.75	14.25

S. O. INDIANA

Chicago, Ill.	14	0	14	15	13
Decatur, Ill.	14.2	0	14.2	15.2	13.1
E. St. Louis, Ill.	13.4	0	13.4	14.4	12.2
Joliet, Ill.	14.4	0	14.4	15.4	13.3
Peoria, Ill.	14.2	0	14.2	14	13.1
Quincy, Ill.	14.2	0	14.2	15.2	12.9
Indianapolis, Ind.	14.2	4	18.2	19.2	14.2
Evansville, Ind.	14	4	18	19	14
South Bend, Ind.	14.4	4	18.4	19.4	14.4
Detroit, Mich.	14.8	3	17.8	18.8	14.7
Grand Rapids, Mich.	14.7	3	17.7	18.7	14.6
Saginaw, Mich.	14.9	3	17.9	18.9	14.8
Green Bay, Wis.	14.6	2	16.6	17.6	13.4
Madison, Wis.	14.3	2	16.3	17.3	13.1
Milwaukee, Wis.	14.1	2	16.1	17.1	12.9
La Crosse, Wis.	15.2	2	17.2	18.2	14
Minneapolis, Minn.	15.2	3	18.2	19.2	13.9
Duluth, Minn.	15.5	3	18.5	19.5	13.9
Mankato, Minn.	15.1	3	18.1	19.1	13.7
Des Moines, Ia.	14.5	3	17.5	18.5	13.3
Davenport, Ia.	14.5	3	17.5	18.5	13.3
Sioux City, Ia.	14.1	3	17.1	18.1	12.9
Mason City, Ia.	14.5	3	17.5	18.5	13.3
St. Louis, Mo.	*13.9	2	15.9	16.9	12.3
Kansas City, Mo.	†14.9	2	16.9	17.9	11.6
St. Joseph, Mo.	†14.5	2	16.5	17.5	12.2
Fargo, N. D.	16.9	2	18.9	19.9	15.9
Grand Forks, N. D.	17.2	2	19.2	20.2	16.2
Minot, N. D.	16.9	2	18.9	19.9	15.9
Pierre, S. D.	15	4	19	20	14.4
Huron, S. D.	15.3	4	19.3	20.3	14.7
Wichita, Kans.	12.8	3	15.8	16.8	11.8
Bartlesville, Okla.	12.5	3	15.5	16.5	11.5

S. O. Indiana's quantity contract price schedule thru territory except Chicago on tank truck deliveries of gasoline, figured from the service station price, is 2c for 500 gals. or more a month; 2½c for 2000 gals. or more a month and 3c for 6000 gals. or more a month.

In Chicago and vicinity, these discounts apply: Over 500 gals. per month, 2c per gal. off service station price; over 1,000 gals. per month, 4c per gal. off service station price.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. OHIO

Wilmington, O.	*12	4	*16	16	14

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both Florida, 1/8c on both; Indiana, 2/25c on both; Kansas, 1/50c on both; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c on both; Missouri, 1/50c on both; Nebraska, 3/50c to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only: Iowa, 13/100c; Michigan 1/5c to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

Prices in Effect May 6, 1929

S. O. OHIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Wapakoneta, Urbana Jamestown	††13	4	††17	18	14
Fayette & Tuscarawas counties, Hamilton & Findlay	**14	4	**18	18	14
†At Other Competitive Points	*14	4	*18	19	14
Elsewhere in Ohio	*15	4	*19	20	14

†These points are: all of Franklin county, including Columbus, Westerville, Worthington and Rome; all of Scioto county, including Portsmouth; Fairfield county, including Lancaster; and these additional points: East Liverpool, Wellsville, Marion, Lima, Perrysburg, Bryan, Hicksville, Mansfield, Celina, Fostoria, Piqua and Piketon.

*Dealers and commercial accounts get 2c per gal. off t.w. price.

**Dealer and commercial consumers' discount at these points is 3c per gal. off tank wagon price.

††Dealer and commercial consumer discount is 1c per gal. off t.w. price.

MAGNOLIA PETROLEUM

Muskogee, Okla.	11	3	14	18	13
Oklahoma City	10	3	13	17	12
Tulsa, Okla.	11	3	14	18	10
Fort Smith, Ark.†	12	†3	15	19	12
Little Rock, Ark.	12	5	17	21	13
Texarkana, Ark.*	12	*2	14	18	13
Dallas, Tex.	11	2	13	17	13
Fort Worth, Tex.	11	2	13	16	13
Houston, Tex.	12	2	14	18	13
San Antonio, Tex.	11	2	13	17	12
El Paso, Tex.	15	2	17	20	16

*Within city of Texarkana, the state tax on gasoline is 2c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 3c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	17	2	19	*21	15
Albany, N. Y.	13	2	15	16	15
Buffalo, N. Y.	14	2	16	17	14
Rochester, N. Y.	14	2	16	17	13
Syracuse, N. Y.	14	2	16	17	12
Boston, Mass.	16	2	18	20	15
Augusta, Me.	16	4	20	22	15
Manchester, N. H.	16	4	20	22	15
Burlington, Vt.	16	4	20	22	15

Note: S. O. New York allows concessions of 1 to 2c per gal. to dealers under posted tank wagon prices.

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	†16	*	†16	21	14
Philadelphia, Pa.	†16	*	†16	21	14
Allentown, Pa.	†16	*	†16	21	14
Erie, Pa.	†13	*	†13	18	14
Scranton, Pa.	†16	*	†16	21	14
Altoona, Pa.	†16	*	†16	21	14
Dover, Del.	†16	3	†19	21	14
Wilmington, Del.	†16	3	†19	21	14
Boston, Mass.	16	2	18	20	15
Springfield, Mass.	16	2	18	20	15
Worcester, Mass.	16	2	18	20	15
Fall River, Mass.	14	2	16	17	15
Providence, R. I.	13	2	15	16	15
Hartford, Conn.	16	2	18	20	14
New Haven, Conn.	15	2	17	18	15
Atlantic City, N. J.	16	2	18	20	13
Camden, N. J.	16	2	18	20	13
Trenton, N. J.	16	2	18	20	13
Annapolis, Md.	16	4	20	22	13
Baltimore, Md.	16	4	20	22	13
Hagerstown, Md.	16	4	20	22	13
Richmond, Va.	16	5	21	23	13
Wilmington, N. C.	16	4	20	22	13
Brunswick, Ga.	17	4	21	23	**16.5
Jacksonville, Fla.	17	5	22	24	14.5

*3-cent state tax is collected by retail dealer and paid by him directly to state.

†The Atlantic Refg Co. recognizes a 2c a gal. discount from its posted tank wagon market on sales to dealers for purposes of resale.

The company also recognizes a maximum discount of 2c per gallon to commercial accounts under contract for one year.

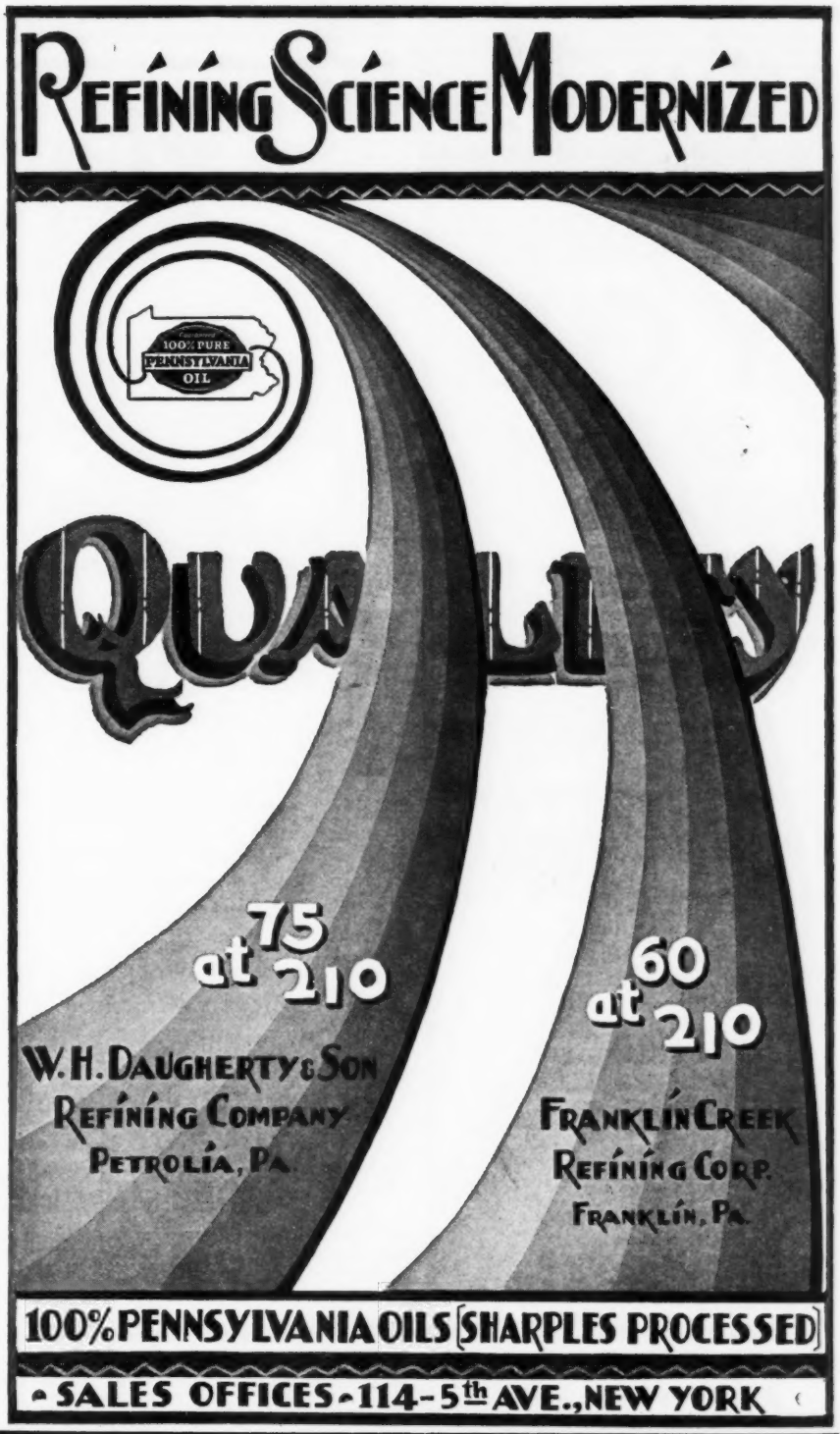
**Georgia kerosene prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22

(*Continued on Page 140*)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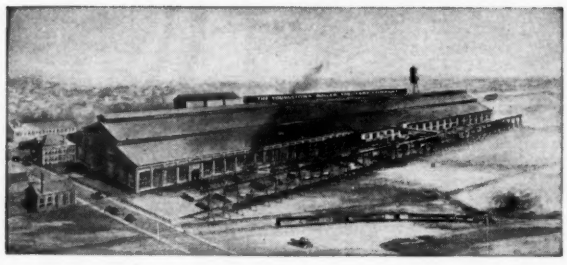

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National Petroleum News, 735 Penton Bldg., Cleveland, Ohio

Crude Oil Prices (in Effect May 6, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$4.10
Bradford District Oil in National Transit Lines (Bradford District)	4.10
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	4.00
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	4.00
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.90
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	3.85
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.50
Corning Grade in Buckeye Pipe Lines (Ohio)	1.75
Corning, O., heavy grade	1.65
Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.65
Ragland Grade in Cumberland Pipe Lines (Kentucky)	$0.60

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.65

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective April 26, 1929

Wooster	$1.75	Princeton	$1.60
Lima	1.65	Illinois	1.60
Waterloo	1.20	Plymouth	1.18
Indiana	1.42	West Kentucky	1.68

Pure Oil Co.

Midland, Midland County, Michigan	$1.50

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia	$1.90
Oil Springs	1.97

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Jan. 25, 1929

Below 25	$0.60	35-35.9	$1.17
25-25.9	0.66	36-36.9	1.20
26-26.9	0.72	37-37.9	1.23
27-27.9	0.78	38-38.9	1.26
28-28.9	0.84	39-39.9	1.29
29-29.9	0.90	40-40.9	1.32
30-30.9	0.96	41-41.9	1.35
31-31.9	1.02	42-42.9	1.38
32-32.9	1.08	43-43.9	1.41
33-33.9	1.11	44 and above	1.44
34-34.9	1.14		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Jan. 24, 1929, same schedule as Prairie in above fields.

Mirando, Tex	$0.80
Salt Flat, Tex	1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Jan. 25, 1929, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

Below 26	$0.60	29-29.9	$0.80
26-26.9	0.65	30-30.9	0.90
27-27.9	0.70	31-31.9	1.00
28-28.9	0.75		

Glasscock, Crane, Upton, Winkler Counties	0.65
Chalkfield (Howard Co.)	0.65
Iatan district	0.93
Corsicana heavy	0.80
Luling	0.80

Carter Oil Co.

(Oklahoma and Kansas)

Jan. 24, 1929, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective Jan. 24, 1929

Hutchinson and Carson Counties:

Below 32	$0.72	38-38.9	$0.96
32-32.9	0.78	39-39.9	0.99
33-33.9	0.81	40-40.9	1.02
34-34.9	0.84	41-41.9	1.05
35-35.9	0.87	42-42.9	1.08
36-36.9	0.90	43-43.9	1.11
37-37.9	0.93	44 and above	1.14

Wheeler County:

Below 30	$0.70	37-37.9	$1.03
30-30.9	0.76	38-38.9	1.06
31-31.9	0.82	39-39.9	1.09
32-32.9	0.88	40-40.9	1.12
33-33.9	0.91	41-41.9	1.15
34-34.9	0.94	42-42.9	1.18
35-35.9	0.97	43-43.9	1.21
36-36.9	1.00	44 and above	1.24

Gray County:

Below 29	$0.69	37-37.9	$1.08
29-29.9	0.75	38-38.9	1.11
30-30.9	0.81	39-39.9	1.14
31-31.9	0.87	40-40.9	1.17
32-32.9	0.93	41-41.9	1.20
33-33.9	0.96	42-42.9	1.23
34-34.9	0.99	43-43.9	1.26
35-35.9	1.02	44 and above	1.29
36-36.9	1.05		

On May 1, The Texas Co. made its first postings on Panhandle crude, adopting same gravity and price schedule as Humble.

WEST TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Winkler, Crane, Upton, Crockett, Howard and Pecos Counties	$0.65

On May 1, The Texas Co. posted same prices as Humble in West Texas, also same prices in Lea County, New Mexico.

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.

Effective Jan. 26, 1929

Below 28	$0.78	36-36.9	$1.20
28-28.9	0.84	37-37.9	1.23
29-29.9	0.90	38-38.9	1.26
30-30.9	0.96	39-39.9	1.29
31-31.9	1.02	40-40.9	1.32
32-32.9	1.08	41-41.9	1.35
33-33.9	1.11	42-42.9	1.38
34-34.9	1.14	43-43.9	1.41
35-35.9	1.17	44 and above	1.44

**Cotton Valley, below 36, $0.75. Beginning with 36-36.9, same schedule as above.

Smackover, below 24	$0.75
do 24 and above	0.90
Bellevue	1.20
*Urania, La	1.00
†East El Dorado	0.75

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Jan. 25, The Texas Co. same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.60; 25-25.9, $0.66; 26-26.9, $0.72; 27-27.9, $0.78.

Jan. 26, Magnolia Petroleum met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Jan. 28, 1929

Below 28	$0.70	30-30.9	$0.82
28-28.9	0.74	31-31.9	0.86
29-29.9	0.78	32 and above	0.90

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective Jan. 26, 1929

Grades A	$1.20	29-29.9	$1.15
Grades B:		30-30.9	1.17
Below 25	1.05	31-31.9	1.19
25-25.9	1.07	32-32.9	1.21
26-26.9	1.09	33-33.9	1.23
27-27.9	1.11	34-34.9	1.25
28-28.9	1.13	35 and above	1.27

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only

Crude Price Changes

NEW YORK, May 4.—On May 1 The Texas Co. made its initial posting on crude in the Texas Panhandle, West Texas and Lea county, N. M. It adopted the same gravity and price schedule in the Panhandle and West Texas as that of the Humble Oil & Refining Co. and posted 65 cents per barrel in Lea county.

NEW YORK, May 3.—Industrial Chemical Sales Co., Inc., 230 Park Ave., has put out a new booklet describing the application of activated carbons (Nuchar) to the refining of vegetable oils, fats, and greases; also another special leaflet on the recovery of dry cleaners' solvent.

NEW YORK, May 3.—General Refractories Co., New York, will have sales representatives in Cuba and Central America, having recently appointed Woodward & MacMillan, Havana, as sales agent for Cuba, Guatemala, British Honduras, Honduras, Salvador, Nicaragua, Costa Rica, Panama, Trinidad and Jamaica.

CHICAGO, May 4.—At a recent meeting of the board of directors, of the Johnson Oil Refining Co., Chicago the following officers were elected: I. H. Johnson, president; J. J. Johnson, chairman of board; G. C. Lilly, secretary and treasurer. George B. Williams will continue as sales manager.

Exports From Tampico District

Company	February	March
Transcontinental-Rayon Cos. (Standard of New Jersey)	344,346	327,516
Huasteca Petroleum Co. (Pan American)	519,046	646,288
Mexican Eagle Oil Co. Ltd. (El Aguila)	395,510	741,768
Cia. Mexicana Holandesa "La Corona"	153,595	194,970
Cia. Mexicana Minerva of S. A.	.....	59,137
The Texas Co. of Mexico S. A.	.....	54,740
Sinclair Mexican Companies	.....	212,301
Pierce Oil Corp.	.....	4,895
Empire Gas & Fuel Co.	56,312	141,541
New England Fuel Co.	68,334	.....
Totals	1,537,143	2,383,156

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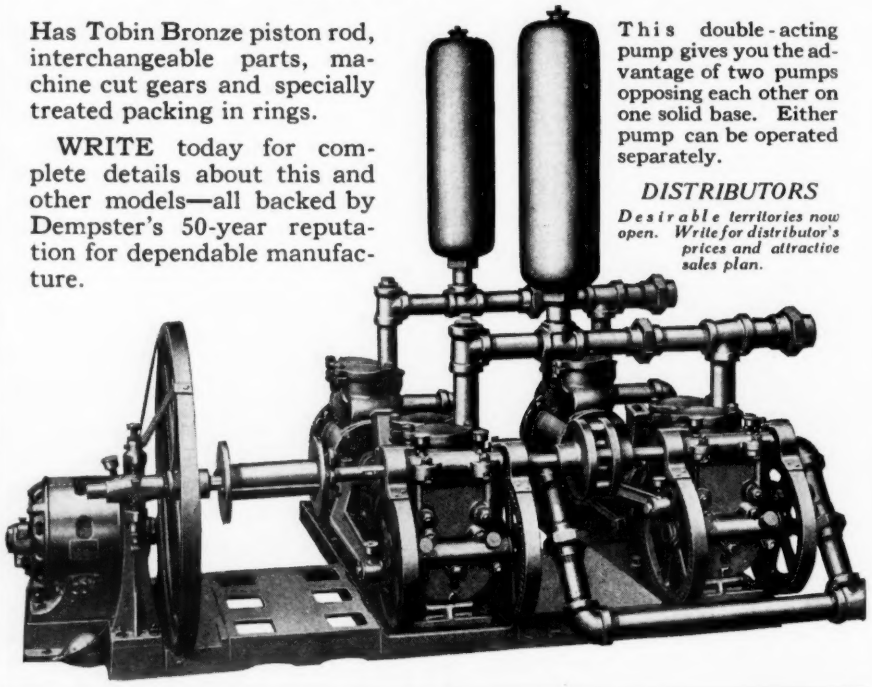

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National Petroleum News
1213 W. 3rd Street Cleveland, Ohio

Crude Oil Prices (in Effect May 6, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on all below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Jan. 25, 1929)

‡Salt Creek 29-29.9	$0.90
" " 30-30.9	0.96
" " 31-31.9	1.02
" " 32-32.9	1.08
" " 33-33.9	1.11
" " 34-34.9	1.14
" " 35-35.9	1.17
" " 36-36.9	1.20
" " 37 and above	1.23
Elk Basin	1.36
Grass Creek light	1.36
Big Muddy	$1.28
Lance Creek	1.38
Rock Creek	1.18
Mule Creek	1.10
Rex Lake	1.10
‡Osage	1.38
‡Cat Creek, Mont.	1.48
Sunburst, Mont.	1.65
‡Hogback, N. Mex.	1.53
Artesia, N. Mex.	1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

***Standard Oil Co. of California**

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach	Inglewood Torrance	Olinda-Brea Canon Richfield	Athens-Rosecrans Dominguez	Elwood Terrace	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick †Kern River	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Kettleman Hills	*Santa Maria (Orcutt)	*Ventura
14-14.9	$ .70	$ .70	$ .70	....	....	$ .70	$ .70	....	$ .50	$ .50	$ .50	$ .50	$ .50	$ .70	....	$ .65	$ .70
15-15.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
16-16.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
17-17.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
18-18.9	.75	.75	.75	....	....	.75	.75	....	.50	.56	.56	.56	.56	.70	....	.70	.75
19-19.9	.80	.80	.80	....	....	.80	.80	....	.50	.62	.62	.62	.62	.75	$1.65	.70	.80
20-20.9	.85	.85	.85	....	....	.84	.84	....	....	.68	.68	.68	.68	.80	for	.70	.85
21-21.9	.89	.89	.89	....	....	.88	.88	.89	....	.74	.74	.74	.74	.85	55°	.86	.86
22-22.9	.93	.93	.93	....	....	.91	.91	.92	....	.80	.80	.80	.80	.90	gravity	.87	.87
23-23.9	.97	.97	.97	....	....	....	.94	.95	....	.85	.85	.85	.85	.95	and	.90	.90
24-24.9	1.01	1.01	1.01	1.01	....	....	.97	.98	....	.90	.90	.88	.88	.98	over	.94	.94
25-25.9	1.05	1.05	1.05	1.05	....	....	1.00	1.01	....	.95	.95	.91	.91	1.01	....	.98	.98
26-26.9	1.09	1.09	1.09	1.09	....	....	1.04	1.04	....	1.00	1.00	.94	.94	1.04	....	1.02	1.02
27-27.9	1.13	1.13	1.13	1.13	....	....	1.08	1.07	....	1.05	1.05	.98	.97	1.07	....	....	1.06
28-28.9	1.17	1.17	1.17	1.17	....	....	1.12	1.10	....	1.10	1.10	1.02	....	1.10	....	....	1.10
29-29.9	1.21	....	1.21	1.21	....	....	1.16	1.15	....	1.16	1.16	1.06	....	1.13	....	....	1.14
30-30.9	1.25	....	1.25	1.25	....	....	1.20	1.20	....	1.22	1.22	1.10	....	1.16	....	....	1.18
31-31.9	1.30	....	....	1.30	....	....	....	1.25	....	1.28	1.28	1.14	....	....	....	....	1.23
32-32.9	1.35	....	....	1.35	....	....	....	1.30	....	1.34	1.34	1.18	....	....	....	....	1.28
33-33.9	....	....	....	1.41	....	....	....	1.35	....	1.40	.140	1.22	....	....	....	....	1.34
34-34.9	....	....	....	1.47	$1.16	....	....	1.40	....	....	1.46	1.26	....	....	....	....	....
35-35.9	....	....	....	1.53	1.22	....	....	1.45	....	....	....	1.30	....	....	....	....	....
36-36.9	....	....	....	1.59	1.28	....	....	1.50	....	....	....	....	....	....	....	....	....
37-37.9	....	....	....	1.65	1.34	....	....	1.55	....	....	....	....	....	....	....	....	....
38-38.9	....	....	....	1.71	1.40	....	....	1.60	....	....	....	....	....	....	....	....	....
39-39.9	....	....	....	1.77	1.46	....	....	1.65	....	....	....	....	....	....	....	....	....
40-40.9	....	....	....	1.83	1.52	....	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	1.89	1.58	....	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	1.95	1.64	....	....	....	....	....	....	....	....	....	....	....	....

*Santa Maria and Ventura postings are by Union Oil Co. Union Oil Co. posts same prices in all above fields as Standard except it does not post prices in Wheeler Ridge, Whittier, La Habra, Newhall and Kettleman Hills. Standard does not contract for crude testing 11-13.9 gravity, but pays 45c a barrel when purchased.

†Kern River down to 12° gravity is 50c; 11-11.9 is 45c.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	May 6	April 29
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.80
Sal Soda wks.	$0.90-1.00	$0.90-1.00
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of cwt.	$3.50-4.50	$3.50-4.50
Liquid Chlorine, tank cars, wks. lb.	3.50-5.00	3.50-5.00

Compounders' Supplies

	May 6	April 29
Vegetable Oils		
Linseed carloads, spot lb.	10.20	10.20
Tanks, spot	9.30	9.30
Soya Bean, Tanks, coast, lb.	9.00	9.50
Oleic Acid		
Distilled, tanks lb.	10.625	10.25
Distilled, bbls. lb.	10.75	11.125
Saponified, tanks lb.	10.75	10.50
Saponified, bbls. lb.	11.625	11.375
Lard Oils		
Prime Winter Strained lb.	15.25	15.25
Extra Winter Strained lb.	13.25	13.375
Extra lb.	12.875	13.125
Extra No. 1 lb.	12.50	12.875
No. 1 lb.	12.25	12.625
No. 2 lb.	12.00	12.375
Tallow oil lb.	11.25	11.25
Neatsfoot Oil		
Pure, bbls. lb.	14.75	14.75
Extra, bbls. lb.	12.75	13.00
No. 1 bbls. lb.	12.50	12.75
Cold Pressed lb.	18.75	18.75
Fish Oils		
Menhaden Oil		
Light Pressed gal.	71	71
Light Pressed, tank cars, N.Y. gal.	65	65
White bleached gal.	77	77
Yellow bleached gal.	73	73
Whale, extra winter bleached, gal.	82	82
Naval Stores		
Steam distilled turpentine, N. Y. gal.	49	49
Steam distilled turpentine, Savannah gal.	45	45
Gum turpentine, N. Y. gal.	53.50	53.50
Gum turpentine, f.o.b. cars Savannah gal.	50	50
Wood Rosin F, N. Y. bbl.	$7.30	$7.40
Wood Rosin F, Savn'h bbl.	$6.60	$6.60
Gum Rosin B, N. Y. bbl.	$7.45	$7.25
Gum Rosin B, f.o.b. cars Savannah bbl.	$6.55	$6.55
Rosin oil, pure gal.	61	61
Rosin oil, compounded gal.	50	50
Pine Tar		
Kiln burnt bbl.	$13.00-14.00	$13.00-14.00
Retort bbl.	$13.50-14.50	$13.50-14.50
Alcohol		
Denatured Formula 5, in bbls., per gal.	56-63	55-62

OIL STOCKS AND FINANCES

National Petroleum News

Phillips Increases Sales, Cuts Expenses, Improves Profit

CLEVELAND, May 6

REDUCTION of operating expenses with an increase in sales at better prices, resulted in a gain in the earnings of the Phillips Petroleum Co., O. K. Wing, has written stockholders.

However, gross income in the first quarter of 1929 was 1½ per cent lower than gross in the first quarter of 1928. This was because of the company's unwillingness to deplete its oil reserves at prices below cost, Mr. Wing wrote. The letter in part follows:

"Through continued expansion along diversified lines, your company was able to show a small increase in profit during the first quarter of 1929 over the first quarter of 1928. Net income after all charges including federal and state taxes but before depreciation and depletion was $3,612,879 against $3,105,091 for the first quarter in 1928.

"Operating expenses and charges were reduced 11.1 per cent while gross income was reduced only 1.2 per cent (due largely to your company's unwillingness to deplete valuable oil reserves below cost prices).

"Your company's natural gasoline plants in operation total 48 and three more are now under construction. Total natural gasoline production increased more than 20 per cent over the first quarter of last year. Prices for natural gasolines were approximately 16.6 per cent higher on March 31, than on Jan. 1, and we are entering the season of increased demand.

"The company's marketing division is being rapidly, yet carefully, expanded. Sales through retail facilities increased 19.8 per cent in the first quarter of 1929 over the fourth quarter of 1928. Total retail outlets now approximate 2,000. Your company's products, Phillips Benzo-Gas, Phillips Aviation, Phillips 66 and Phillips Oils are being favorably accepted by the public. Refining capacity is being increased and refinery operation has been satisfactory.

"Company's position as one of the largest producers and wholesalers of natural gas continues to improve. Phillips occupies an increasingly important position in the carbon black industry of the country.

"Shipments of domestic and wholesale grades of liquefied petroleum gas increased 394 per cent over the first quarter in 1928. Several new Philgas (domestic fuel) areas have been put into operation and more are contemplated in the immediate future. Sales of Philfuels (industrial grades) are increasing both in volume and in number of purchasers. This division affords a new and broad outlet for natural gas and gasoline products.

"Two new oil pools in Ellis County, Kansas, have been opened on large blocks of acreage owned by your company. Some drilling is in progress in an attempt to determine the extent of these promising pools, but active development will await correction of the country's overproduction."

STANDARD
O
I
L
ISSUES

SOUTH PENN
OIL CO.

NEW STOCK
(WHEN ISSUED)

BOUGHT—SOLD—QUOTED

CARL H. PFORZHEIMER & CO.

Specialists in Standard Oil and Miscellaneous Oil Securities

25 Broad Street New York

Stewart's Son Replaced On Lago Board

CLEVELAND, May 6.—William Green has been elected a director of the Lago Oil & Transport Co., to replace James W. Stewart, son of Col. Robert W. Stewart. The Lago is a subsidiary of the Pan American Petroleum & Transport Co., which is controlled by the Standard Oil Co. of Indiana.

E. J. Bullock of the Indiana company also has been elected a director of Lago replacing Amos Ball. Other directors of Lago were reelected at the recent annual meeting.

The Indiana company at Chicago issued this statement:

"It is true that James W. Stewart has resigned from Lago Oil & Transport Co., but no change is contemplated in the presidency of Pan American Petroleum & Transport Co., a position held by R. G. Stewart."

R. G. Stewart is another son of Col. Stewart. The statement answers recent rumors that he would resign from Pan American because his father no longer is chairman of the board of the Indiana company.

Mexican Seaboard May Issue More Stock

NEW YORK, May 4.—Refinancing by Mexican Seaboard Oil Co. is expected to take the form of a stock issue but the company announced this week that no definite plan had been decided on.

Reports from Los Angeles were that the company would grant stockholders the right to subscribe for new stock at $32 a share on a basis of one new share for each four held. Trading on a "when issued" basis was begun on the Los Angeles Curb.

All of Mexican Seaboard's present authorized stock of 1,000,000 no par shares, has been issued. It is said the refinancing would provide for the retirement Sept. 1 of $3,500,000 10-year 7 per cent debentures due that date.

Cities Service Co.—Stockholders have approved a 4 for 1 split of common stock. Four new no par shares will be issued for each outstanding $20 par common stock.

Above—The famous Goodrich Gasoline Test. See details below.

Photo shows Sinclair Refining Company service station, Country Club Plaza, Kansas City, Mo. Equipped with Goodrich gasoline hose.

Making gasoline hose that gasoline cannot destroy

GASOLINE is the natural enemy of rubber. Until Goodrich developed Celinol, a sealing layer that gasoline cannot dissolve, frequent replacement expense in gasoline hose was unavoidable.

Celinol, however, will not dissolve in gasoline. While the ordinary sealing layer quickly becomes gummy and loses all elasticity and tensile strength, Celinol is unaffected by gasoline, and under tests, shows 50% less deterioration in tensile strength, as well as only one third the degree of swelling.

You can compare the remarkable gasoline-immunity of Celinol for yourself, by the immersion test.

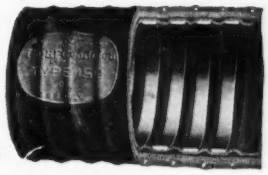
Take a small section of Celinol lining and put it in a bottle filled with gasoline. Take a similar small section from a piece of ordinary rubber and put it in another bottle. Leave both samples immersed for sixty days. At the end of that time you will see that Celinol still retains its toughness and elasticity, whereas the other rubber has become gummy and has lost all resiliency.

We will gladly send a small sample of Goodrich Celinol so that you can make this test. Write to The B.F.Goodrich Rubber Co., Akron, O., or send the coupon below.

The Goodrich Guarantee

Guaranteed against defect for 24 months after hose is placed in service—a copy of the guarantee is attached to every length before it leaves the factory

Oil Suction and Discharge Hose



Scientifically balanced combination of wire, fabric and oil-proof rubber. Also made with reinforced cover and ends for sea-loading service. Dock records of leading oil companies show this hose outlasts other makes 25% to 50%.

Goodrich Distillate Hose

For conducting fuel oil. The oil-proof tube and cover are the result of years of chemical research work. This hose contains no metal. Light and flexible. Furnished in long lengths. Sizes — 1", 1¼", 1½" and 2".

Goodrich

N.P.N.-4

THE B. F. GOODRICH RUBBER CO.,
Akron, Ohio.

Gentlemen: Please send me a small sample of Celinol sealing layer so that I may test its superiority myself.

Name.....

Firm.....

Address.....

Transactions in Oil Shares on New York Stock Exchange

1928 High	1928 Low	1929 High	1929 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended May 4 Sales	First	High	Low	Last	Change
43⅞	27⅛	42⅝	30⅛	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Apr. 30, 29	10,200	33	34⅜	32½	34	+ 1
85	51¼	64¾	44	(sh) 209,180	N.P.	American Republics Corp.	....	.....	1,900	56⅞	56⅞	53¼	55½	+ ⅞
5 ⅜	37½	47¼	43	$56,000,000	$25	Associated Oil	50cQ	Mar. 31, 29	70	44⅞	45½	44⅞	45	0
62½	50	68¾	53½	50,000,000	25	Atlantic Refining	‡25cQ	Mar. 15, 29	267,000	64⅜	*68¾	62½	69¼	+ 4⅜
118¼	114½	117⅝	114	20,000,000	100	do pfd.	$1.75Q	May 1, 29	40	116	116	116	116	+ 2
53	20	46⅞	38⅛	47,261,125	25	Barnsdall Corp. A	50cQ	May 6, 29	61,400	43¼	45	43	45	+ 1½
51⅛	20	49	38⅛	300,525	25	do B	50cQ	May 6, 29	.....	.....	.....	.....	.....	.....
24½	12¼	28½	20	(sh) 956,075	N.P.	Beacon Oil	....	.....	4,600	23	23⅜	22½	23⅜	+ ⅜
36	25¼	30	26¾	$51,524,150	$25	California Petroleum	....	Jan. 1, 29	.....	.....	.....	.....	.....	.....
94⅞	68	81¼	63	21,031,400	100	General Asphalt	....	.....	47,800	73⅜	81¼	72¼	81	+ 7
141	110½	123	104½	6,628,200	100	do pfd.	$1.25Q	Mar. 1, 29	2,200	115	*123	115	122	+10
167	79	107	80⅛	25,000,000	100	Houston Oil	....	.....	17,400	92¼	100	92	99¼	+ 1¼
38⅜	21¾	38⅛	30	(sh) 1,333,157	N.P.	Independent Oil & Gas	50cQ	Apr. 30, 29	34,200	36⅛	38	35⅜	37⅜	+ 1⅜
39⅝	9	52⅝	29	$4,299,190	$10	Indian Refining	....	Dec. 15, 20	67,500	49½	49⅞	47⅝	48⅞	— ⅞
37¼	8½	48¾	28	4,550,110	10	do ctfs.	.....	.....	63,300	47½	47½	44¾	45⅝	— 1½
185	140	165	160	1,977,700	100	do pfd. new	$1.75Q	Apr. 1, 29	.....	.....	.....	.....	.....	.....
39⅛	27⅜	33½	26¼	3,992,387	N.P.	Lago Oil & Transport	....	May 2, 27	1,400	30¼	30⅜	29	30⅜	+ 1⅜
19¾	9⅜	18	12¾	(sh) 1,187,298	N.P.	Louisiana Oil Refining	.....	.....	21,500	13⅞	14⅝	13¾	14⅛	+ ¼
96	78	100	89	$4,000,000	$100	do pfd.	$1⅝Q	Feb. 15, 29	20	90½	90½	90½	90½	0
25½	12½	18⅛	12	(sh) 330,000	N.P.	Maracaibo Oil	....	.....	10,000	17	17⅝	16½	17	0
49¾	33	47⅛	35⅞	(sh) 2,316,897	N.P.	Marland Oil Co.	.....	Mar. 31, 27	33,400	40	41¼	39⅝	40⅛	— ¼
360	250	295	205	$45,942,800	$100	Mexican Petroleum	‡3Q	Apr. 20, 29	60	236	242	†205	242	— 8
.....	.....	.....	.....	12,000,000	100	do pfd.	$2Q	Apr. 20, 29	.....	.....	.....	.....	.....	.....
73	45⅝	69⅜	41½	(sh) 995,500	N.P.	Mexican Seaboard	....	Nov. 15. 24	194,400	55	57	54¼	56	— 1½
44½	25⅛	39⅞	30½	(sh) 1,857,461	N.P.	Mid-Continent	.....	Aug. 1, 27	15,400	35⅛	35¾	34⅝	35¾	+ ½
120½	103¼	121	120¼	$6,718,000	$100	do pfd.	$1.75Q	Mar. 1, 29	.....	.....	.....	.....	.....	.....
7⅜	2⅜	5⅛	3¾	23,849,720	10	Middle States	....	July 1, 23	5,300	4¼	4¼	4	4⅛	— ⅛
5⅞	1½	3½	2¾	5,950,500	10	do ctfs.	....	.....	4,900	3	3⅛	2⅞	3⅛	— ⅛
2¼	1	1½	1	(sh) 3,500,000	N.P.	Pacific Oil	....	.....	12,900	1⅛	1¼	1	1⅛	0
55½	38¼	63	41⅜	$50,000,000	$50	Pan American P. & T.	....	Oct. 20, 27	31,100	60	*63	60	63	+ 2⅛
58⅛	37¾	66½	40½	121,101,400	50	do B	....	Oct. 20, 27	291,800	60⅞	*66½	59⅛	66⅜	+ 5⅜
28⅜	15½	17½	14	(sh) 400,000	N.P.	Pan American Western B.	....	Jan. 30, 27	300	14	14	14	14	0
21¾	11½	15¼	9½	(sh) 199,370	N.P.	Panhandle P. & R.	....	.....	1,800	12⅛	13⅝	12⅛	13	+ ¾
106¼	70	76	47½	$2,935,200	$100	do pfd.	....	July 2, 23	200	65	67	65	67	+ 2
53⅞	35¼	47	37¼	(sh) 2,406,803	N.P.	Phillips Petroleum	37½cQ	Apr. 1, 29	15,200	41⅝	42⅞	41½	41⅝	— ¾
5¼	½	3⅜	2¼	$29,622,925	$25	Pierce Oil	....	.....	3,500	2⅝	2⅞	2½	2⅝	— ¼
50	16¼	51½	30	15,000,000	100	do pfd.	....	Feb. 1, 22	900	44	44	43½	44	+ ½
6⅝	3½	5⅞	4⅝	(sh) 2,500,000	N.P.	Pierce Petroleum	....	.....	4,500	5⅜	5½	5⅛	5⅛	— ⅛
64⅝	59½	65⅝	58	$60,636,450	$25	Prairie Oil & Gas	.....	Aug. 31, 27	8,100	60⅛	60⅞	59⅛	59⅝	— 1⅛
.....	.....	61	53⅝	101,250,000	25	Prairie Pipe Line	‡75cQ	Mar. 31, 29	19,100	59	*61	58⅛	61	+ 1
29¼	16	25⅞	18¼	37,450,850	50	Producers & Refiners	....	Sept. 15, 23	1,900	21⅞	22	21⅛	21¼	+ ⅜
49⅝	41	45¾	38⅛	2,845,350	50	do pfd.	....	May 1, 25	90	41⅝	43	41½	43	+ 1
31¾	19	29½	23½	75,959,250	25	Pure Oil Co.	25cQ	Mar. 1, 29	85,100	27¼	*29½	26½	29½	+ 2¼
119	108	115½	112	13,000,000	100	do 8% pfd.	$2Q	Apr. 1, 29	190	112¼	114	112	114	+ 1¾
56	23½	49¾	40	47,127,725	25	Richfield Oil	50cQ	Feb. 15, 29	19,100	45	47	44⅜	47	+ 1¾
.....	.....	42½	33⅜	(sh) 1,200,000	N.P.	Rio Grande Oil Co.	‡$1S.A.	Jan. 25, 29	12,100	36½	37½	36¼	37¼	+ ¾
64	44⅜	55¾	31¾	(sh) 546,646	$13.40	Royal Dutch N. Y. shares	$1.336	Feb. 8, 29	2,900	51¾	52½	51⅜	52⅜	+ ⅜
57½	39⅜	55¾	43	(sh) 65,203,000	£2	Shell Transport & T.	96.4c	Feb. 8, 29	.....	.....	.....	.....	.....	.....
39⅜	23¼	31⅜	26	12,254,979	N.P.	Shell Union Oil	35cQ	Mar. 31, 29	31,100	29⅛	30⅛	28⅜	30⅛	+ ¾
27¼	18⅛	34¼	18¼	$8,357,280	$10	Simms Petroleum	40cQ	Mar. 15, 29	123,900	30	33	29	32⅜	+ 1⅞
46¾	17⅜	45	36	5,494,095	N.P.	Sinclair Consolidated	‡50cQ	Apr. 15, 29	109,100	38⅛	39⅝	37⅝	39¼	+ ¾
110	102½	111	107¾	$16,025,200	$100	do pfd.	$2Q	Feb. 15, 29	100	107¾	107¾	†107¾	107¾	— 1
42⅜	25	46¼	32⅛	27,396,590	25	Skelly Oil Co.	50cQ	Mar. 15, 29	71,100	44	46¼	43⅜	46¼	+ 1¾
80	53	80⅞	64	(sh) 13,016,435	N.P.	S. O. California	62½cQ	Mar. 15, 29	52,100	76⅛	79⅜	76	79⅜	+ 2
59¾	37⅜	61½	48	$612,095,850	$25	S. O. New Jersey	‡25cQ	Mar. 15, 29	105,100	58¾	61⅜	57⅜	61⅜	+ 2⅞
45½	28¾	45¾	38⅝	434,094,575	25	S. O. New York	40cQ	Mar. 15, 29	96,100	42⅞	43¾	42⅛	43⅝	+ ⅜
77	31½	68½	57	(sh) 1,297,847	N.P.	Sun Oil	25cQ	Mar. 15, 29	1,300	61½	64⅜	61½	63⅞	+ 3⅛
110	100	105½	100	$5,000,000	$100	do pfd.	$1.50Q	Mar. 1, 29	90	104¼	105½	103¼	103½	+ ⅛
14¼	2½	12	7	(sh) 1,304,698	N.P.	Superior Oil Corp.	....	Dec. 20, 20	26,100	8¾	8¾	8½	8¾	— ⅛
74⅜	50	68½	57¼	$211,082,925	$25	The Texas Corp.	75cQ	Apr. 1, 29	59,100	64⅝	67	64⅛	67	+ 2
26⅝	12⅛	23⅞	16¼	8,380,340	10	Texas Pacific Coal & Oil	2½%s	Mar. 20, 29	9,800	20⅛	21¼	19½	20½	+ ½
41½	19⅜	38½	27⅜	(sh) 2,179,275	N.P.	Tide Water Oil Co.	20cQ	Mar. 31, 29	2,600	33¼	35	33¼	35¼	+ 1½
100⅛	86¾	97½	90⅛	$20,321,000	$100	do 5½% pfd.	$1.25Q	Feb. 15, 29	900	94½	94⅝	94	94½	+ ½
25	14¾	22	17½	(sh) 4,877,976	N.P.	Tide Water Associated	.....	Aug. 1, 27	12,900	19⅞	20⅜	19½	20	+ ⅜
91¾	81⅞	90	86	$72,989,200	$100	do pfd.	$1.50Q	Apr. 1, 29	800	94	88	87	88⅛	+ ¼
14½	6¾	13	9	(sh) 3,842,029	N.P.	Transcontinental Oil	.....	.....	41,800	10⅞	11¾	10½	11½	+ ½
58	42¾	54⅛	46	$40,858,375	$25	Union Oil of California	50cQ	Feb. 10, 29	5,100	50⅛	51½	50	51⅜	+ ⅜
128⅛	110	150¼	121⅞	31,101,200	100	Union Tank Car Co.	$1.25Q	Mar. 1, 29	400	142½	146	142½	146	+ ¼
44⅞	26	42⅞	32⅝	(sh) 488,359	N.P.	Warner Quinlan	50cQ	Apr. 2, 29	15,900	33⅞	35⅞	33¾	35¼	+ 1⅜
38	20⅛	37⅛	30¼	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Apr. 20, 29	2,700	36	36	35⅛	35⅝	— ⅜
22⅛	17¼	29¾	19½	(sh) 428,967	N.P.	Wilcox Oil & Gas	....	May 10, 28	12,200	28	28⅛	26¾	27⅜	— ⅜

*New High †New Low XEx-dividends ‡Also extras s-Stock Total Sales 2,155,060

Pittsburgh Stock Exchange

Transactions Week Ended May 3, 1929

	Sales	High	Low	Last	Change
Ark. Nat. Gas	86,793	8¼	5	7⅞	+2⅞
do pfd.	9,186	8¼	8	8	0
Devonian Oil	4,765	13½	7	10½	+3½
Dixie Gas & Util.	500	14	14	14	0
do pfd.	100	75	74	75	0
Lone Star Gas	2,975	74⅛	69¾	73½	+4
Pet. Exploration	140	31	31	31	—1
Phoenix Oil pfd.	800	.45	.45	.45	0
Plymouth Oil	110	26	25	25	0
Salt Creek Cons.	300	3¾	3¾	3¾	0
Wiser Oil	98	13	13	13	—1½

Tank Wagon Tables

(Continued from Page 133)

	Gasoline T.W. Tax	Gasoline Total T.W.	Gasoline Total S.S.	Oil T.W.
St. Louis	14.6	16.1		17.9
New York		17		23
Boston		19		23

*Includes 2c state tax. †Includes 1c city tax.

Petroleum Spirits

Tank Cars (Solvent)	
New York refineries	11.50
Philadelphia refineries	11.50
Tank Wagon or Steel Barrels	
New York City	17
New England	19
New Jersey	16
Pennsylvania	16–18

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline T.W. Tax	Gasoline T.W.	Gasoline S.S.	Oil T.W
ONTARIO				
Toronto	19.5 5	24.5	28	21
Ottawa	15.5 5	20.5	24	21
Cochrane	24.5 5	29.5	..	26
Ft. William	22.5 5	27.5	31	22.5
MANITOBA				
Winnipeg	21.5 3	24.5	28	21.5
SASKATCHEWAN				
Regina	26 3	29	33	26
ALBERTA				
Edmonton	27.5 3	30.5	34	27.5
Calgary	23.5 3	26.5	30	23.5
BRITISH COLUMBIA				
Vancouver	22 3	25	29	23
QUEBEC				
Montreal	19.5 5	24.5	28	22
Quebec City	21.5 5	26.5	30	23
Three Rivers	21.5 5	26.5	30	23
NEW BRUNSWICK				
St. John	24 5	29	33	25
Moncton	24 5	29	33	25
NOVA SCOTIA				
Halifax	24 5	29	33	25
Sydney	24 5	29	33	25
PRINCE EDWARD ISLAND				
Charlottetown	24 5	29	33	25

Note: In districts surrounding these points 1c additional is added to city price.

Cleveland Stock Market

May 2	Par Value	Bid	Asked
Canfield Oil Co.	$100	125	143
do pfd.	100	103	...
Fred G. Clark	10	9	10
National Refining	25	33⅛	37
do pfd.	100	...	137½
Paragon Refining	25	24½	25
do pfd.	N.P.	41½	44
do ctfs. of deposit	...	20	24½

xEx dividend

Oil Company Earnings

Year	1928	1927
Atlantic Lobos	*$174,165	*$209,222
Mexican Seaboard	*1,332,906	*2,232,246
Pan Amer. Western	*1,291,547	74,368
Shell Union Oil	20,395,021	11,344,914
First Quarter	**1929**	**1928**
American Republics	*$83,788	*$251,729
Beacon Oil	140,477	*408,920
Houston Oil	345,147	337,862
Richfield Oil	1,927,262	1,315,518
Skelly Oil	1,170,208	69,085

*Loss

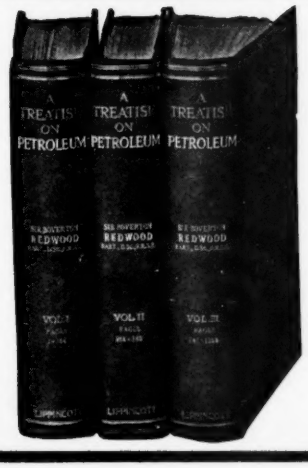
Skilled Supervision
Guarantees the Quality of Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices
PITTSBURGH, PA.

District Sales Offices
New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans



Information on all branches of the petroleum industry is to be found in the 4th edition of A TREATISE ON PETROLEUM by Sir Boverton Redwood.

To obtain this valuable set make your check for $30 payable to

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1213 W. 3rd St. Cleveland, Ohio

ACCURACY

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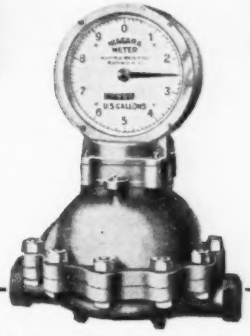

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Standard Oil Stocks on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended May 4 Sales	First	High	Low	Last	Change
22⅜	14⅞	18¾	14⅞	£4,126,460	£ 1	Anglo-American Oil	24.4c	June 6, 28	3,100	15¼	15¼	†14⅞	15	— ⅛
21¼	15	18	14½	.....	...	do certificates	.....	.....	200	15	15	15	15	0
20½	14⅜	17	14	.....	£ 1	do cts. non-voting	.....	.....	200	14	14½	†14	14½	— ⅜
5	1¼	2⅜	1½	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	900	2	2	†1½	1½	— ⅛
9¾	3¼	4⅛	3¾	$10,000,000	$50	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
56	44½	46½	38	$1,000,000	25	Borne-Scrymser	‡$1S.A.	Apr. 15, 29	1,200	39¾	42	39¾	41¾	+ 3¼
76	58	74¼	67	10,000,000	50	Buckeye Pipe Line	‡$1Q	Mar. 15, 29	500	69	70⅞	69	70	+ 1
161	117¼	170¼	140⅛	3,000,000	25	Chesebrough Mfg	‡$1Q	Mar. 31, 29	100	170¼	*170¾	170¼	170¼	0
23	16	29	17⅛	36,123,350	10	Continental Oil	.....	Dec. 15, 27	22,800	22⅞	24¼	22½	24¼	+ 1¼
17½	9½	11⅜	8⅜	.....	N.P.	Creole Petroleum	.....	.....	8,800	9⅛	9¼	8⅝	9	0
82	67	75¾	62	1,500,000	50	Cumberland Pipe Line	‡$1Q	Mar. 15, 29	100	68¾	69	68¾	69	+ 4
88	64⅛	70½	59½	5,000,000	100	Eureka Pipe Line	$1Q	June 1, 29	110	59½	62½	†59½	62½	0
13	4¼	6⅝	5½	16,000,000	100	Galena Signal Oil	.....	June 30, 25	.....	.....	.....	.....	.....	.....
86	26	90	75	4,000,000	100	do new pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
89¾	35	85	75	2,000,000	100	do old pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
114¾	59¼	123¼	89⅝	73,685,700	25	Humble Oil & Refining	‡30cQ	Apr. 1, 29	21,800	116	*123¼	114½	121½	+ 7½
290½	176½	340½	285	20,000,000	100	Illinois Pipe Line	$10S.A.	Dec. 15, 28	500	325	*340½	325	340½	+ 5½
104	56¾	119⅝	88	(sh) 6,591,458	N.P.	Imperial of Canada	‡25cQ	Mar. 1, 29	2,800	113⅝	119	112¾	116½	+ 2
91⅞	74⅝	97	81¼	$5,000,000	$50	Indiana Pipe Line	‡$1Q	Feb. 15, 29	300	91	91	90¾	91	0
55	35	65½	46⅜	(sh) 7,123,544	N.P.	International Petroleum	25c	Mar. 15, 29	3,700	54¼	55½	53¼	54¼	— ¾
32⅜	19⅜	25⅞	21⅜	$6,363,350	12.50	National Transit Co	‡25cQ	Mar. 15, 29	200	24½	24½	24⅜	24½	+ ⅛
75	38½	85	72	5,000,000	100	New York Transit	.....	July 15, 26	150	80	82	80	82	+ 2½
69	56½	63	54	2,000,000	50	Northern Pipe Line	$2S.A.	Jan. 2, 29	300	57½	59⅝	57½	59	+ ½
83½	58½	74⅜	64⅛	60,000,000	25	Ohio Oil Co	50cQ	Mar. 15, 29	6,100	69	71	69	70½	+ 1¼
84	28	44½	30	10,000,000	25	Penn Mex. Fuel	75c	Dec. 16, 28	200	...	30½	30¼	30½	— ⅛
220	167	50	40	4,000,000	25	Solar Refining	$5S.A.	Dec. 20, 28	100	44⅞	44⅞	44⅞	44⅞	+ ⅞
19	12	22½	13	1,000,000	10	Southern Pipe Line	$1	Mar. 1, 29	800	19¾	21	19½	21	+ 1½
71⅞	36¾	60¼	40⅜	20,000,000	25	South Penn Oil	50cQ	Mar. 31, 29	3,500	59¾	59¾	56⅝	58½	+ 1½
102	70	70	62¾	1,750,000	50	South West Pa. Pipe Lines	$1	Apr. 1, 29	100	67¾	67¾	67¾	67¾	+ 2¾
95⅞	70⅞	103¼	56	230,788,513	25	S. O. Indiana	‡62½cQ	Mar. 15, 29	27,700	59½	59¾	59⅛	59⅛	— ⅜
27¾	15	21⅞	18	8,000,000	25	S. O. Kansas	.....	June 16, 24	600	19½	19½	19⅛	19¼	— ¼
49	44	45¼	38	25,654,516	10	S. O. Kentucky new	40cQ	Mar. 31, 29	3,200	39¼	40	39⅛	39⅝	+ ⅛
54⅝	39⅞	49⅜	45½	4,649,225	25	S. O. Nebraska	‡62cQ	Mar. 20, 29	400	48⅞	*49¾	48½	49¾	+ 1
134	71	128¾	110¼	14,000,000	25	S. O. Ohio	62½cQ	Apr. 1, 29	1,600	124	*128¾	123½	128½	+ 3¾
125	116	124½	116¼	7,000,000	100	do pfd	$1.75Q	Mar. 1, 29	.....	.....	.....	.....	.....	.....
23½	16	18	15	861,466	25	Swan Finch Co	30c	Jan. 15, 29	100	15	15	15	15	0
111	72	133¾	105½	126,154,000	25	Vacuum Oil	$1Q	Mar. 20, 29	2,300	125½	126½	124½	125½	— ⅞

*New High †New Low ‡Also Extras

Independent Oils on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Par Value	Stocks	Transactions Week Ended May 4 Sales	First	High	Low	Last	Change
1½	.53	.72	.45	$ 5	Amer. Cons. Oilfields	2,000	.58	9/16	½	½	+ ⅛
9½	3½	8⅝	4⅝	N.P.	Amer. Maracaibo	3,800	4¾	5	4⅝	4⅝	— ¼
4½	2¼	5	1⅞	$10	Argo Oil	12,400	4½	*5	4½	5	+ ⅜
3¾	3⅜	5¾	3¾	10	Arkansas Nat. Gas	529,700	5⅜	8⅝	5⅛	7¾	+ 2⅜
55	32¾	62	50	N.P.	British American Oil	.....	.....	.....	.....	.....	.....
23⅞	3¾	4⅝	2⅝	25c	Carib Syndicate	6,600	3¼	3¼	3	3⅛	0
90⅞	54	121⅞	88⅝	$25	Cities Service	25,500	113⅜	116½	113	116½	+ 3⅛
.....	.....	.....	.....	....	do new	18,900	28½	29½	28½	29½	+ ⅞
103½	94½	98½	88¾	100	do pfd	1,600	97½	98¼	97½	98⅛	+ ⅜
9⅝	8⅞	9¼	8¼	10	do pref. B	200	9	9¼	9	9¼	+ ¼
97	88½	95	92½	100	do pref. BB	100	94	94	94	94	0
35¼	27⅜	....	....	10	do Bankers	.....	.....	.....	.....	.....	.....
2¼	1	1½	1⅛	1	Colombia Syndicate	3,400	1⅛	1¼	1⅛	1⅛	0
17⅝	9¾	15	8¼	....	Colon Oil	8,400	9⅞	9⅞	8⅝	9¼	— 1/16
8⅞	6¼	11⅜	6⅞	10	Consolidated Royal	200	7⅝	8	7⅝	8	+ ¼
3¼	.76	2½	1⅛	N.P.	Crown Central	1,400	2	2	1¾	1¾	— ⅛
15	6¾	11¾	8	N.P.	Crystal Oil	.....	.....	.....	.....	.....	.....
50	48	51⅛	51⅛	$100	do pfd	.....	.....	.....	.....	.....	.....
33⅛	8⅛	26	17	N.P.	Darby Petroleum	200	17	17	17	17	0
13½	7⅛	....	....	....	do trust ctfs	.....	.....	.....	.....	.....	.....
2⅞	1	5	2	N.P.	Derby Oil & Refining	100	3¾	3¾	3¾	3¾	— ¼
21¾	7½	....	....	N.P.	do pfd	400	27	27	27	27	0
2	1	....	....	N.P.	Gibson Oil	.....	.....	.....	.....	.....	.....
.53	.15	....	....	N.P.	Gilliland ctfs	.....	.....	.....	.....	.....	.....
165	101¾	167	142¾	$25	Gulf Oil Corp	8,400	160¼	163	158⅜	162½	+ 3
7¼	5⅝	7½	4½	5	Homaokla Oil	2,500	5	5	4⅜	5	0
3⅜	1	2½	1¼	10	Intercontinental Pet.	17,300	2⅜	2⅜	2⅛	2¼	+ 1/16
3	⅛	3⅜	1¾	N.P.	Kirby Petroleum	800	2⅛	2¼	2	2	0
9⅜	5⅜	6¼	5	N.P.	Leonard Oil & Dev	800	5	5	5	5	0
43⅜	20	37¾	24¾	N.P.	Lion Oil & Refg	2,800	36⅞	*37¾	35½	35½	— ¼
69⅛	48⅛	74⅞	67	$25	Lone Star Gas	1,800	69¼	73⅞	69	73⅞	+ ¼
1⅞	.50	1¼	.60	1	Magdalena Syndicate	7,400	.61	5/8	9/16	9/16	0
48½	32	38½	25	N.P.	Margay Oil	100	25	25	25	25	+ 4
40½	40½	....	....	$10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
8	2¼	6⅜	3⅜	N.P.	Mexico-Ohio Oil	800	5	5	4¾	5	0
.74	.20	....	....	$10	Mexico Oil	.....	.....	.....	.....	.....	.....
1¾	.76	1½	1⅜	1	Mountain & Gulf	900	1⅛	1⅛	1⅛	1⅛	0
28⅞	19½	22⅞	18⅜	10	Mountain Producers	1,800	18½	18⅞	†18⅜	18½	— ½
5⅜	4¼	5	3⅞	5	New Bradford	1,300	4⅛	4½	4	4	— ½
5½	3	3⅜	3	10	New England Fuel	.....	.....	.....	.....	.....	.....
11⅞	7⅛	9¾	7¼	1	New Mex. & Ariz	2,800	7¼	7¼	6½	6½	— ¾
15½	11½	....	....	25	New York Petrol	.....	.....	.....	.....	.....	.....
40	39¼	....	....	....	North Amer. Oil Cons.	.....	.....	.....	.....	.....	.....
13¼	8½	11⅝	8¾	N.P.	North Cent. Texas	300	11½	*11⅝	11⅛	11⅛	+ ⅛
....	....	19¼	14⅝	N.P.	Oil Stock, Ltd. A	800	14⅞	15⅛	14½	15⅛	+ ⅜
....	....	17⅞	15	N.P.	do B	.....	.....	.....	.....	.....	.....
26¼	20	23¼	18	N.P.	Pacific Western Oil	1,200	18¼	19½	†18	18⅝	+ ¼
6	2¼	3½	2	N.P.	Pandem	1,400	2⅛	2¼	2	2	+ ⅜
15⅝	8½	10¾	7	N.P.	Pantapec	1,400	7½	7½	†7	7⅛	— ⅜
20	10⅝	....	....	$25	Paragon Refg. B. ctfs	.....	.....	.....	.....	.....	.....
.09	.04	....	....	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
7¾	4⅞	7⅝	4⅝	$10	Pennok Oil	.....	.....	.....	.....	.....	.....
....	....	34½	27¼	N.P.	Petroleum Corp	3,000	....	30½	28¾	29⅞	— ⅜
5⅜	3⅛	....	....	$5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
31⅜	26½	30	23	N.P.	Plymouth Oil	1,800	25	25¼	24½	25	0
18	8	16	11½	25	Red Bank Oil	100	.14	.14	.14	.14	0
.13	4⅛	8½	5	N.P.	Reiter-Foster	2,400	5¼	5¼	5	5⅛	0
31½	23¼	25¾	24⅛	$25	Richfield pfd	200	25	25¼	25	25¼	+ ¼
..	....	29	23½	....	Root Refining pfd	500	28	*29	26¾	27	— 1
12	4⅝	11	7	N.P.	Ryan Consolidated	100	7	7	7	7	0
7¼	5½	5⅞	3⅛	$10	Salt Creek Cons	100	3½	3½	†3⅛	3¼	+ ⅛
35	23¼	25⅞	21	10	Salt Creek Prod	800	21⅜	21¼	19½	20	— 1¼
3½	1	2¼	1⅜	5	Savoy Oil	.....	.....	.....	.....	.....	.....
40	27	33⅛	32	25	Shreveport El Dorado	.....	.....	.....	.....	.....	.....
....	....	23	16⅝	N.P.	Texon Oil & Land	3,200	20⅛	21½	20⅛	21	+ ¾
22⅞	13	16⅞	11⅝	$10	Tidal Osage	100	14⅞	14⅞	14⅞	14⅞	0
21¼	13⅜	16½	10⅜	10	do non-voting	400	12⅞	14	12⅞	13⅛	+ ⅜
93¾	75	90	80	100	Transcontinental pfd	300	84	*90	84	89	+ 5
74¼	18	69	66	10	Venezuela-Mexico	.....	.....	.....	.....	.....	.....
9⅛	4¾	6½	4¼	5	Venezuelan Petrol	2,200	4¾	4¾	4½	4⅝	— ⅛
8¼	4⅞	9⅛	5¾	1	Woodley Petroleum	.....	.....	.....	.....	.....	.....
⅝	⅜	5⅜	2¾	25	Y Oil & Gas	300	2⅞	2⅞	2¾	2¾	— ⅛

*New High †New Low

New York Curb Bonds

Week Ending May 3

	High	Low	Last	Change
Beacon Oil 6s '36	111	111	110½	+1
Cities Serv. 5s '66	89¼	86⅝	89¼	+1¾
Cities Serv. G 5½s '42	91½	90½	90½	0
Cities Serv. P. 6s '43	95¼	94½	93¼	+ ½
Cont. Oil 5¼s '37	96	95	95	— ½
Empire O & R 5½s '42	91¾	90⅝	91¼	+ ⅜
Gulf Oil 5s '37	100¾	100½	100½	— ¼
Gulf Oil 5s '47	101	100¾	101	+ ¼
Independent Oil 6s '39	117	113⅛	116	+2
Richfield Oil 5½s '31	101⅜	100⅜	101⅜	+ ⅞
Sun Oil 5½s '39	100⅝	100½	100½	— ⅛

Oil Dividends

	Amount	Payable	Stock of Record
Associated Oil q	50c	June 29	June 17
S. O. California q	62½c	June 15	May 15
Swan-Finch Oil Corp. q	43¾c	June 1	May 16

New York Bonds

Week Ending May 3

	High	Low	Last	Change
Assoc. Oil gold 6s	102	102	102	0
Atlantic Refg. deb. 5s	101	101	101	+⅛
Cal. Pet. 5s	99⅝	98¾	99	— ¾
Cal. Pet. 5½s	101¾	100½	101	+ ¼
General Asphalt 6s	105	104¼	105	+ ½
General Pet. 5s	100¾	100¾	100¾	0
Humble Oil & Refg. 5s	100⅝	100	100⅛	— ¼
Humble Oil & Refg. 5½s	101½	101	101	— ½
Pan Amer. P. & T. 7s	104½	104½	104½	0
Pan Amer. P. & T. 6s	108	106½	108	+ ⅞
Pan Amer. P. & T. 6s	97⅛	96½	97⅛	+ ⅛
Pierce Oil deb. 8s	106	105½	105½	—1½
Prod. & Refg. 8s Ex-war.	109½	109	109	— ½
Pure Oil 5½s	98½	98	98½	0
Shell Union Oil 5s	97¾	97¼	97¾	+ ½
Sinclair Con. Oil 7s	103⅛	102⅝	103	+ ⅛
Sinclair Con. Oil 6½s	101	100⅝	101	— ½
Sinclair Con. Oil 6s D	99¼	99⅛	99⅛	0
SinclairCon.OilCrude5½s	96⅞	96	96½	— ⅜
Sinclair Pipeline	94	93¾	94	+ ¼
Skelly Oil 5½s	94⅞	94	94⅜	— ⅛
S. O. N. Y. 4½s	97	96⅜	96⅜	— ⅛
S. O. N. J. 5½s	102½	101	101	— ¼
Union Oil of Calif. 6s A	106¾	106¾	106¾	— ¼
Union Oil of Calif. 5s C	98½	97¾	98½	+ ¼
White Eagle Oil 5½s	102	101¾	101¾	+ ¼

Oilstocks Offers Trust Shares

CLEVELAND, May 6.—An offering of Standard Oilstocks trust shares is being made at about 13½. Each share represents a one-thousandth interest in 164 common stocks of 32 companies of the Standard Oil group. The stock is to be deposited with the Fidelity-Philadelphia Trust Co. of Philadelphia as trustee by the Standard Oilstocks Corp., an investment trust.

The shares making up the 164 are as follows:

Eight each of Standard of California, Standard of Indiana, Standard of Kentucky, Standard of Nebraska, Standard of New Jersey, Standard of New York, Standard of Ohio, and Continental Oil Co.

Six each of Atlantic Refining Co., Buckeye Pipe Line Co., Humble Oil & Refining Co., National Transit Co., Ohio Oil Co., Prairie Oil & Gas Co., Prairie Pipe Line Co., South Penn Oil Co., Union Tank Car Co., and Vacuum Oil Co.

Four each of Anglo-American Oil Co., Chesebrough Mfg. Co., Indiana Pipe Line Co., Solar Refining Co., and Standard of Kansas.

Two each of Borne-Scrymser Co., Cumberland Pipe Line Co., Eureka Pipe Line Co., Imperial Oil, International Petroleum, Northern Pipe Line Co., Southern Pipe Line Co., and South West Pennsylvania Pipe Lines.

Certificates in denominations of 5, 10, 25, 50, 100, 500 and 1000 Standard Oilstocks trust shares are to be issued. They are expected to yield more than 7 per cent annually, the corporation claims. Dividend dates are Aug. 15 and Feb. 15.

The trust was executed March 25, 1929, and will expire March 25, 1949, when the stocks or securities for which they may have been exchanged or converted, will be sold and the proceeds after deduction of expenses and taxes are to be divided among the trust shareholders.

Management of the trust is vested equally in the trust company and the Standards Oilstocks Corp.

Tank Car Corporation Elects

CLEVELAND, May 6.—Godfrey M. Brigham of Tulsa has been elected a vice-president of the North American Car Corp., which has headquarters at Chicago. Other officers elected following the annual meeting are: Henry H. Brigham, president; Erwin R. Brigham and C. O. Frisbie, vice-presidents; Erwin R. Brigham, secretary, and G. A. Johnson, treasurer.

THE OIL INDUSTRY EXCHANGE

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FILLING STATION SUPERVISOR with fifteen years experience constructing and managing filling stations, tank wagon sales and salesmen, desires connection with opportunity to produce results. Thirty-eight years of age, married, and can give best of reference. Address Box 321.

REFINERY SUPERINTENDENT eighteen years operation and construction of skimming, lubricating and cracking plants, consider position as assistant with reliable company. Address Box 291.

MECHANICAL ENGINEER with broad experience as construction and maintenance engineer. Technical graduate, refinery and gasoline plant experience. Address Box 331.

Situations Open

CHEMIST WANTED for laboratory work in large refinery in Illinois. Young man, university graduate, with some experience preferred. Good opportunity. Give age, details of training and experience. Address Box 327.

MID-CONTINENT REFINER has position open for man of technical training with broad experience operating pipe still, cracking and lubricating units. Must have managing ability and capable assuming responsibility. Reply should state age, qualification and salary expected which will be treated confidentially. Address Superintendent, National Petroleum News, 904 World Building, Tulsa, Oklahoma.

SALESMAN WANTED who has a wide acquaintance and a thorough knowledge of conditions in the Mid-Continent field, to sell a high grade aluminum paint to the oil industry. To the right type of man we can offer an attractive opportunity. Experience in our line is not as essential as real selling ability. References required. Address R. T. Jones, Sales Manager, The Excelsior Varnish Works, Inc., Cleveland, Ohio.

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SERVICE STATION BUSINESS FOR SALE. Ideal location on famous White Horse Pike, twelve miles from Atlantic City. Established four years. 200 feet frontage. Unobstructed. Constant stream of traffic. Write Box 328.

QUANTITY OF FOUR BROTHERS QUALITY GREASE for sale at a price to close out surplus stock. In excellent condition. In sizes 14 oz., 3 lb. and 10 lb. Address Box 329.

BULK PLANT AND BUSINESS FOR SALE. Gasoline and motor oils. 250,000 gallons gasoline 1928. Good chance for expansion. Very good location, best section New York State. Address Box 330.

OIL RECLAIMING PLANT FOR SALE within Baltimore city limits on railroad siding. One acre ground, office building, laboratory, storage tanks, stills, steam plants, sheds, loading platform. Wonderful opportunity for oil company desiring to establish Eastern branch.

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